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ORIGINAL ARTICLES.

TWO CASES OF RECURRENT TUBAL PREGNANCY.[1]

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Case I.—MRS. W. J. B.; first child born in 1888; second in 1892; third in April, 1895; no miscarriages. On September 16, 1896, after an interval of six weeks since her last menstruation, she was attacked at one o'clock in the afternoon with very severe pains in the abdomen. There was constant pain extending from the pelvis to the lumbar region, with frequent colic. These symptoms subsided, after a continuance of three hours, and were followed by a great deal of soreness over the low part of the abdomen. In four hours after the beginning of the pains she was so much better that she sat up in a chair, and in less than nine hours from the beginning of the pains, she returned in a carriage to her home, a distance of over a mile. The patient described the colicky pains of this attack by comparing them with the gripings of an attack of diarrhea, from which she had previously suffered. While the colicky pains continued she had almost constant nausea, but not any vomiting. On Thursday, September 17th, she still had slight abdominal soreness, but not any colicky pains, was up most of the day, and did some housework. She continued to feel pretty well until six o'clock Friday, September 18th, when the colicky pains returned with great severity, continuing about one hour, with constant pain between the colics. This left her with much abdominal soreness. She had to be helped to bed, after which she rested very well all night. On Saturday, September 19th, some soreness continued in the abdomen, and she also had a constant suggestion of nausea. She rested well on Saturday night, dressed herself on Sunday morning, September 20th; but remained in a chair or on a couch all day. She retired at eight o'clock in the evening and was awakened at ten o'clock by terrible pains; when these pains had continued a short time, her sister arrived and exclaimed to her husband, in the presence of the patient, that she was a "dying woman." The patient has only an indefinite recollection of much that transpired from this hour, until after she recovered from the abdominal section seventeen hours later.

Her physician, Dr. R. M. Curts, first saw the patient at eleven o'clock P. M., September 20th, after the beginning of the most severe colics. The abdomen was slightly bloated; she also vomited frequently from this time until after operation. Dr. Curts found her pulse to be 120; temperature 99° F. He visited her again at four o'clock in the morning, September 21st; her pulse was then 130; her temperature 97° F.; she was very pale. I saw the case, eight hours later, at noon, with Dr. Curts. Pulse then more rapid than in the morning, temperature still 97° F. She was removed to the Paterson General Hospital for abdominal section. Upon reaching the hospital she was taken directly to the operating-room; her pulse was then 160 to 170, and could scarcely be counted at the wrist. Upon opening the abdominal cavity we found it to contain pounds of clots and pints of blood; no fetus was discovered; all bleeding points were tied, the cavity cleansed and the incision closed. Normal saline solution per rectum, strychnine subcutaneously, hot-water bottles, and other restorative treatment used in such cases, were employed in this case. The patient made an uninterrupted recovery, leaving the hospital in twenty-five days after operation in a condition of health.

I feel greatly chagrined to find that I have no written record of the side on which this gestation occurred. The patient did not refer her pains to either side particularly. My inability to definitely determine this matter robs this case of much of its interest. It has been my custom, as those who are associated with me know, to keep full notes of cases and also of operations; this forms a most unfortunate exception to my regular habit.

Second Attack.—Excepting two spells, in the spring of 1897 and 1898, she menstruated regularly until and including March 24th, 1899. She did not menstruate during the following April and saw no menstrual blood until about May 5th, when there was a slight show. While working in her garden at eleven o'clock in the morning that day, she was taken with colicky pains and general soreness in the abdomen. She went into the house and rested for an hour or two, after which the cramps ceased, leaving only a very slight soreness of the abdomen. In the afternoon she resumed her work in the garden and had no recurrence of pains until Saturday, May 20th. She then had slight colicky pains and some abdominal soreness. She remained in bed until the following Tuesday, May 23rd, when she walked two or three miles. From that time she felt quite well until Tuesday, May 30th, when the colicky pains returned, although they were by no means severe. She then again had a slight appearance of blood at the vagina, the first since May 5th. Dr. James M. Curts, brother of Dr. Curts before-named, saw her on

[1] Reported to the Section on Obstetrics and Gynecology, New York Academy of Medicine, February 20, 1900.

that date. She remained in bed, off and on, until July. From May 30th until July she saw blood at the vagina almost daily, with many clots, which were preceded by pains. On Wednesday, June 21st, she was curetted by her physician, Dr. R. M. Curts, without relief from the metrorrhagia. Between June 21st and July 2d, the patient discovered a tumor rising out of the pelvis, somewhat to her left side, which, she says, became rapidly larger. Notwithstanding the rapid development of this tumor, she neither experienced pains nor abdominal soreness; in fact, she had felt much better after the curettement of June 21st, and was out of bed more. I first saw the patient with Dr. R. M. Curts on July 2d. Regarding the case as a recurrence of tubal pregnancy, an abdominal section was proposed, and done on the day following.

Upon opening the abdomen some blood was found in the abdominal cavity, and a thin-walled hematoma, larger than a child's head, with a broad base rising over the right horn of the uterus. Bleeding points were tied, the abdominal cavity cleansed of blood, and the operation completed. The patient made a good recovery, leaving the hospital seventeen days after operation, in a condition of health. She remains well.

Case II.—MRS. M. A. F., aged thirty-three years; married thirteen years; one child eleven years old; no miscarriages. She menstruated every four weeks, excepting on one occasion five or six years ago, when she went ten days over time. Her menstruation usually lasted five days, was free from clots, normal in amount, and, at

FIG. 1.

CASE I. Hematoma showing how the tumor which originated from right side gave greatest prominence on left side.

times, was accompanied with slight pains on the first or second day.

On March 6, 1899, when twelve days overdue, she flowed about the usual amount, normal in character, and for six days, but with much pain in her right iliac region. The sitting position caused pains in the pelvis, and it hurt her for weeks following to sit down; and, indeed, until after the operation. On March 16th, she began to flow again, and this continued four or five days with colicky pains; these colicky pains were always referable to the right iliac region. She was first seen by Dr. Ventura Fuentes, of New York City, about March 21st. She then had a great deal of soreness over the lower abdomen, with pain on her right side. She was out of bed a part of every day and did a little housework. The colicky pains were so frequent and severe that morphine was often taken for their relief. Blood appeared from the vagina again,

FIG. 2.

CASE II.—Fetus of first tubal pregnancy.

March 26th, and continued until March 30th, when clots appeared for the first time. From March 30th until April 28th, when she entered the hospital, she flowed almost daily and passed many clots, the colicky pains continuing. At no time was she free from bloody discharge for two days in succession. The worst pains experienced occurred on Sunday, April 23d, when they were most agonizing, and continued for a number of hours. From that time onward the pains were frequent in the daytime and often awakened her in the night. They were all referable to the right side. For two or three days before entering the hospital, she fainted on several occasions, wanted to be fanned a great deal, and had nausea for one entire night. Admitted to the hospital April 28th. Pulse 88; temperature 99° F.

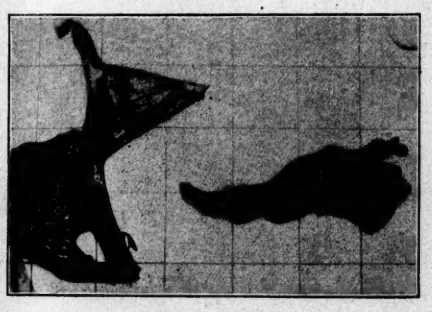
I attempted to operate on this patient by the vaginal route, but was unable to control the hemorrhage in that way, and at once resorted to suprapubic section. On making the preliminary vaginal section the small fetus (Fig. 2) appeared, accompanied by a great many clots, and blood which drained from the abdominal cavity. After making the suprapubic section the bleeding points were tied with catgut, the abdominal cavity made clean, and a gauze drain placed through the cul-de-sac of Douglas into the vagina. The patient made a good recovery, and was discharged from the hospital, cured, twenty-two days after operation.

She menstruated regularly for six months until the recurrence of ectopic gestation.

Second Attack.—On December 24, 1899, after a period of thirty-eight days since her last regular menstruation, the patient had a flow of blood greater in quantity than a normal menstruation which persisted six days. It was fluid in char-

acter, except on January 30th, when clots appeared. On January 1, 1900, she was taken with severe pains, first in the left lumbar region, which very shortly ran through the left iliac region, and became central in the hypogastrium. These pains began at 7:30 in the evening and were uninterrupted and most severe until 11:30 that night. During that seizure she vomited twice. At midnight the pain subsided and she slept lightly for the remainder of the night. After January 1st she did not have any severe pains, but she had slight pains in her left iliac region many times a day and a great deal of pain low in the sacral region until after operation. She also had soreness across the abdomen on January 2d, 3d, and 4th. The flow of blood appeared again from the vagina on January 4th and lasted a day and a half. On January 5th, when I first saw her, she complained of a great deal of pain in her left shoulder and in other parts of her body. She then had a little pain in her left side, and some tenderness over the lower part of the abdomen; pulse 88; temperature 99° F. She was removed to the Paterson General Hospital January 6th. She then had a brownish dis-

FIG. 3.



CASE III.—Left tube from which abortion occurred in second tubal pregnancy.

charge from the vagina and slight pain in the left side of her pelvis. She was etherized on January 7th and was found to have a uterus slightly larger than normal. The left tube very much enlarged, especially at its fimbria. Nothing abnormal discoverable to the right of uterus. Pulse 90; temperature 99° F. From this time until January 15th the patient was fairly well and had only slight pains in the left pelvis. She was rather better every way, with pulse about 90, and temperature about normal. I then reëxamined her without the aid of an anesthetic. I found to the right side of her uterus a rounded tumor less than three inches in diameter, and on her left side a tube, probably not larger, or in any way different from that described in my examination of January 7th. I then performed an abdominal section. A large amount of blood was found in the peritoneal cavity, with clots adhering to a ruptured left tube. The left tube was removed; also the rounded tumor, which proved to be a very thin-walled exudation cyst of the right broad ligament, containing colorless serum (see Fig. 3). This small tumor I regarded as secondary to the condition on the left of the uterus. The patient made a rapid and uninterrupted recovery, leaving the hospital in a condition of health twenty days after operation.

Cases of ectopic gestation recurring in the same individual are no doubt rare. I regret that I have not found time in this relation to search literature for reports of cases. Aside from a case, which was a recurrence in the right tube, reported by Dr. Henry C. Coe to the American Gynecological Society in 1893, I am able to refer only to the three following cases which I quote from Dr. Kelly's Operative Gynecology: One case by Dr. Taylor, of Birmingham, England; one case reported to the Berlin Obstetrical and Gynecological Society by Olshausen in 1889; and one case by Herman.

In Taylor's case the two gestations occurred in the right tube. At the first no operation was done and the diagnosis was based on the formation of a hematoma at the time of rupture and the finding of an old scar in the tube which was removed at the operation at the time of recurrence. Olshausen exhibited a living child of right tubal origin and in a little more than one year he operated on the woman for a ruptured left tubal pregnancy of five weeks' duration. Herman operated for a ruptured tubal pregnancy and there was later diagnosticated an unruptured pregnancy on the opposite side.

My first case probably had a recurrence of ectopic pregnancy and in the stump of the right tube which I believe to have been the side on which the first pregnancy occurred. My second case had her first pregnancy in the right tube and her recurrence in the left tube.

RECENT ADVANCES IN THE TREATMENT OF INSOMNIA.

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AT the Montreal meeting of the British Medical Association in 1897 I presented a paper on the treatment of insomnia, afterward published in the *British Medical Journal*. In that presentaton of the subject I took the occasion to rehearse the results of work done by the most conspicuous investigators as providing the data from which we might arrive at the construction of a working hypothesis of sleep phenomena, whether natural or induced. This preliminary work I then supplemented by brief sketches of certain of the hypnotic agents then new or most commonly accepted, and endeavored to indicate how each bore upon the sleep hypothesis which was offered.

In the present paper, which I design to make much more brief, I have set before myself the purpose of supplementing my former paper and continuing its deductions to the present date.

Sleep is as essential as food, therefore we must have at our command means of inducing it which are safe, reliable and pleasant in their action. This statement is conditioned by our knowledge or our estimate of what insomnia really is.

Insomnia is a symptom, the result and not the cause of cerebral affections. Our rational treatment is, therefore, to seek out the cause of this symptom and to apply our efforts to the relief of that cause, not vaguely to attack the mere symptom iself. In its relation to pathological conditions we know insomnia to appear as a symptom of various habits, such as alcohol, coffee, and tobacco; in this guise relief from the symptom comes most reasonably from the eradication of the causative habit, and hypnotics are needed but rarely and then only as a temporary measure. In the line of cases where insomnia is symptomatic of pain, the relief of the pain is the proper course, and where that is impracticable it is not a hypnotic to which we should have a recourse but a narcotic. Similar examples will so readily suggest themselves that I need not recite them. In the treatment of any case in which insomnia is the patent symptom we should first seek out and remove the cause; then exhaust the possibilities of physical therapeutics; and then, and not until then, do we arrive at a place which drugs, and drugs alone, can occupy. Here we encounter two lines of treatment which are to be avoided; the first is routine prescribing, which is utterly indefensible; the second is the reckless administration of drugs. Remember that insensibility is not sleep, and it is sleep which we aim to secure, not insensibility. Our logical theory of the treatment is to consider, not how much of any hypnotic agent can be administered with safety, but how little will induce a sleep approximating in depth, duration, and peace the normal slumber. We are to bear in mind that sleep is a phenomenon which we are not to compel but to persuade.

Before we can proceed to the examination of any hypnotic it is necessary to consider how hypnotics act, and that consideration must rest on the theory of sleep-phenomena.

When we reflect that sleep occupies in the main one-third of all human existence, it is surprising that it has been so little studied. Were we to view in a broad way this globe of the earth at this moment, or at any moment of time, we should find the line between the sleeping and the waking of all life as sharply drawn and as clearly defined as the boundary of the light and the darkness on the face of the moon.

In such study as has been given to the subject three main theories have been advanced; two have been for the most part set aside as not accounting for the whole phenomenon, yet each has contributed to the third. The detailed review of these theories has been presented in my preceding paper, and I will not now refer to more than a summary of the earlier ones.

The first of these theories is that sleep is due to cerebral anemia, for which several methods of causation have been proposed. How entirely this theory is inadequate in explanation of sleep will appear when the anemia theory is pushed to its logical conclusion, namely, the production of an undoubted anemia by considerable loss of blood; here hemorrhage should, in accordance with this theory, be followed by sleep, yet we all know of the wakefulness which is the real result.

The second is the chemical theory of sleep. If we follow the investigators who have pursued this hypothesis we find them examining the action of oxygen and of lactic acid, others the effect due to katabolism, and, finally, we reach their conclusion that the volume and the contents of the brain-cells diminish as a result of fatigue. This theory is a forward step, for it brings us nearer a working hypothesis of the action of hypnotics.

Out of these theories we have come to the present theory of the neurons, which, far better than its predecessors, explains many of the physiological phenomena of sleep. From its importance to our inquiry I shall cite the briefest presentation of this theory, that of Dercum. "The cortical cells in the motor area have processes extending toward the surface—dendrites—and a protoplasmic process extending downward through the white matter of the brain, the internal capsule, the crus, the pons, the medulla, and into the spinal cord, where it terminates in a brush-like extremity, the end-tuft. Here it has a certain relation with the motor cells in the anterior horn of the cord, probably one of contact, although that is not definitely known. If the nerve-cells retract, this contact is broken; if the abnormal constriction of the process is relieved for the time being, contact once more takes place." Evidently, I may add, if the neurons are functionally active the dendritic processes must be in contact, for without this consciousness is impossible. When the nerve-cells are exhausted by physiological fatigue, or artificially by drug-administration, there is every reason to believe that their volume shrinks, and it is, therefore, more and more difficult for them to remain in contact. When relaxation comes the processes retract and unconsciousness, *i. e.*, sleep, supervenes.

We have now to consider what drugs will safely and reliably produce this dendritic retraction, and which are tolerable to the patient.

Leech has shown that the alcohol radicles, of which ethyl and methyl are typical, depress the functions of the higher cerebral centers, and that chlorine more than the alcohol radicles is depressant of the lower centers. These facts, then, give us the root of our theoretical hypnotic. To reach both the higher and the lower centers, it must associate with one of these alcohol radicles a sufficiency of chlorine. From this somewhat restricted class we must in practical therapeutics exclude such agents as depress the circulatory system or derange the digestive tract.

Permit me to sum up tersely the requirements in a hypnotic which shall approximate as closely as possible the theoretical agent. It must com-

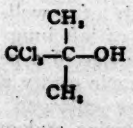
bine one of the alcohol radicles for the action in breaking contact of the dendritic processes with chlorine to affect simultaneously the downward protoplasmic processes; it must be free from depressing action on the heart and blood-vessels, it must not derange the assimilative system; it must be safe; it must be reliable, and it must be palatable.

In my Montreal paper, to which this is a supplement, I discussed a short list of the newer hypnotics which seemed to meet a majority of these requirements. To that list I wish to add the only new hypnotic which has attracted marked attention, chloretone, which meets so completely each one of these requirements as to present itself as a very close approximation to the theoretical hypnotic of which we have been in search. Curiously enough, it closely fulfils the prophecy which I then made as to the chemical composition of the ideal hypnotic.

It will simplify the examination of this product, for which we are indebted to Houghton and Aldrich, if we say at the outset that the coal-tar derivatives are found to be depressant of the circulatory system; that the opium extractives are, whether we find them to be narcotics or hypnotics, damaging to the functions of the digestive tract. These two groups are, therefore, for these reasons to be excluded from the search for an approximation toward our theoretical hypnotic.

Chloretone is a derivative of chloroform and acetone, and is also known as acetonchloroform; it is chemicaly described as a trichlor-tertiary-butyl-alcohol. When caustic potash is gradually added to equal weights of chloroform and acetone a reaction ensues which results in this new substance, which is isolated by steam distillation for the removal of whatever of the two principal substances may be found to exist. Having been cooled, after the removal of water by melting, it appears in white acicular crystals with a strong odor of camphor. In chloroform, acetone, strong alcohol, ether, benzin, and glacial acetic acid, it is freely soluble; in cold water it is soluble to the extent of one per cent., which corresponds in therapeutic value to a four-per-cent. cocaine solution. It is a hypnotic, but that does not limit its applicability. It is an analgesic of value, and very successful as a local anesthetic. For the purposes of this paper I will restrict myself to its hypnotic uses.

How close is its approximation to the theoretical hypnotic will appear distinctly in its formula, as follows:—



It will be observed on inspection of this formula that we have a double supply of the methyl alcohol radicle (CH_3) and a sufficient potency of chlorine (CCl_3). This is at once in conformity with the active constitution of that which I have shown is the theoretical hypnotic.

That being the case I will now pass to the other requisites which I have before mentioned. And here we must call upon the clinical history of the use of this agent.

First, its safety. The customary dose is from 6 to 18 grains, yet we have record of a case in which the patient through misadventure took as many as thirty-six tablets of 3 grains each, in all 108 grains of the substance, and, while cast into a profound sleep for three days, he did not present, either during this sleep or after restoration to consciousness, any symptom to cause the least alarm.

Second, its reliability. In all the use which has been made of this substance, it has never yet failed of prompt action for the purpose for which it was administered.

Third, ease of taking. Chloretone is given in the form of rapidly disintegrating tablets, which are, of course, practically devoid of taste. In crystals it is given either in capsules, which are absolutely tasteless, or even in the uncovered powder, in which the only taste is a not unpleasant flavor of camphor, which is found quite volatile and evanescent.

Combining these statements of constitution and clinical observation, it is shown that in every particular chloretone is our closest approximation to that theoretical hypnotic to which we have been led through a study of the working hypothesis of the sleep-phenomena.

Now, a word in conclusion of this brief paper, a word to indicate after what manner chloretone acts.

The laboratory experiments show us that chloretone, as chloretone, passes unmodified from the digestive tract into the blood, where it may be isolated. The blood conveys the the chloretone to the different organs, and there seems in laboratory experiment sufficient warrant for the belief that it has a selective action on the central nervous system. ' Here, then, or in some other region of the body, that point not having yet been fully determined, the chloretone is burned down and in the burning down produces its hypnotic effect. That it is really decomposed within the body appears from the fact that, volatile as it is, we do not find it in the expired air; nor has it been positively recognized in the urine.

Now, assuming that chloretone has a selective affinity for the central nervous system, and this assumption seems a very safe one; and still further assuming (and this seems equally safe) that it is there decomposed, we have the theory of its great hypnotic effect. The methyl radicles set free in the burning down are known to retract the dendritic filaments, the chlorine similarly derived to retract the protoplasmic processes. The dendritic filaments under the influence of chloretone lose touch among themselves, the protoplasmic processes are out of contact with the motor cells of the anterior horn of

the spinal cord by the retraction of their end-tufts. The condition which normal fatigue produces has been produced through our safe hypnotic, and sleep follows. The drug has not in itself produced insensibility or even unconsciousness, it has only been used to bring about that cell-retraction which nature demands, and the cell-retraction has produced the refreshment of sleep without distinction as to whether the conditioning circumstance is due to the operation of fatigue or drug.

Two points in the paper to which reference has been made, the regarding of insomnia as a symptom and the making of an ideal hypnotic, have already been the subject of much attention and study by others. The third, the danger from the use of hypnotics, is equally important. Some years ago the profession was not awake to the danger of sulphonal and trional. To-day my suggestions may be now accepted as opinions for the guidance of the physician. That serious and even fatal results may come unexpectedly is shown by the instances in the use of other hypnotics reported by Bampton, Vogel, Schultze, Geill, Pettit, Friedlaender, and others, confirming the importance of the warning which was given at that time.

In brief, then, the advances in the treatment of insomnia have been in the recognition that insomnia is a symptom, in realizing that certain commonly-employed hypnotics may be not only dangerous but even yield fatal results, and, finally, the production of a hypnotic whose chemical constitution rests upon the basis which was suggested in my Montreal paper.

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PURULENT MENINGITIS: REPORT OF SIX CASES.[1]

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IN the MEDICAL NEWS of May 20, 1899, there appeared an article by the writer, reporting the analysis of the post-mortem records of eighty cases of meningitis. Since that date there have been eleven instances in which autopsy has disclosed the existence of purulent meningitis. Five of these cases were of the epidemic variety; one complicating erysipelas; one purulent otitis media; one following uterine infection; one due to the colon bacillus; one tubercular, and one following traumatism. The following is a report of six of these cases:

Case I.—A middle-aged male was admitted to the hospital in a state of maniacal delirium, resembling that of acute alcoholism. Temperature 101° F., pulse weak and rapid. Died sixteen hours later.

At necropsy the dura mater was found to be normal. The pia mater enveloping both brain and spinal cord was everywhere infiltrated with a purulent exudate of a thick, creamy consistency, lending to these organs a greenish-yellow color. The ventricles were distended with a slightly turbid fluid. Other viscera presented nothing of special interest.

Bacteriology: Two tubes containing bouillon and two of blood serum were inoculated from the meningeal exudate of the brain and cord, and developed pure growth of the diplococcus intracellularis. Two blood serum cultures, where a large amount of the exudate was carried by the inoculating needle into the tube, gave no evidence of growth after forty-eight hours at a temperature of 37° C. Cover-slips smeared with this exudate were found to contain many diplococci, for the most part situated in the polynuclear leucocytes; staining readily by aniline gentian violet, but not by Gram's method.

Case II.—Male, age thirty-eight, was admitted to the hospital with a history of a fall two weeks previously, at which time he received severe contusion of both ankles. He was apparently doing well up to the day of his admission when he had a severe convulsion. On entering the hospital he was unconscious, pulse 120, respirations 30, temperature 99° F., this soon rose to 101° F.; head retracted; eyes turned to the right, suffused and pupils contracted. Over abdomen and legs a petechial eruption was seen. Kernig's sign was not present. Knee-jerks normal. Death occurred five hours later.

Necropsy disclosed nothing of special interest, except purulent meningitis of the brain and spinal cord. Dura mater was normal. Beneath the pia mater was seen a purulent exudate most marked along the course of the vessel and along the fissure of Sylvius. The ventricles contained a normal amount of fluid which was slightly turbid. Cover-slip preparations from pus of meninges showed diplococci, not specially located in the pus-cells. This coccus stained by Gram's method. Staphylococci were also present. The spinal cord presented what appeared to be the result of a meningeal hemorrhage at the upper dorsal region, where a small amount of purulent exudate was seen.

Bacteriology: Cultures made from pus of both brain and spinal cord were found to contain two organisms, the pneumococcus and the staphylococcus pyogenus albus.

Case III.—Female, age forty, was admitted to the hospital in a state of collapse and died a few hours later.

Necropsy: Body of a well-nourished colored woman. At apex of left lung were seen two recent abscesses, the size of a pea. Otherwise the organs of the thoracic cavity were normal. Mesenteric veins were enlarged and had a hard, shot-like feel. Uterine and ovarian veins presented similar conditions and on section were found to be plugged with firmly clotted blood. The splenic and gastric veins were also affected.

[1] Contribution from the Philadelphia Hospital Laboratory, May 20, 1899.

The uterus was enlarged and its endometrium congested and covered by a thick, yellowish pus. Os admitted two fingers readily. Meninges normal over cortex. Beneath the pia mater covering the pons and optic chiasm was seen a seropurulent exudate. The pituary body was surrounded by thick, yellow pus. The vessels entering the orbit were likewise enveloped in purulen exudate.

Bacteriology: Cover-slips smeared with pus from the abscess of the lung, meninges, orbit, and pituitary body showed streptococci; while those prepared from the veins of the abdominal cavity showed streptococci and bacilli. Cultures made from the above sources were found to develop only streptococci, except those made from the abdominal cavity, which contained streptococci and the colon bacillus. Cultures from the uterine cavity showed streptococci and a large motile bacillus (not determined).

Case IV.—An aged woman was admitted to the hospital in an unconscious state; head retracted; tenderness over calf muscles; knee-jerks absent; plantar reflex normal; pupils contracted but reacting to light. Herpes labialis was marked, and a harsh systolic murmur was heard at the apex. Urine contained albumin and granular casts. Temperature ranged from 101° F. to 106° F., the point reached just before death. Pulse 120, weak and compressible. Blood examination showed red cells to be 5,000,000 per cmm., white cells 54,000. Kernig's sign was present a few hours before death, which occurred four days after entering hospital.

Necropsy: Liver presented some fatty change; heart fatty and there was marked sclerosis of mitral leaflets; kidneys showed interstitial changes. Meningeal vessels were prominent and along their course were seen small areas of purulent exudate; between which the meninges were edematous. The cerebellum and pons were covered with purulent exudate, which was reflected over the parietal region on the right. The ventricles were distended with slightly turbid fluid. The pia of the spinal cord was infiltrated at the posterior surface in the dorsal region.

Bacteriology: Cover-slips prepared from meningeal exudate contained diplococci and bacilli. The bacilli and many of the diplococci were decolorized by Gram's iodine solution, while other diplococci were slightly, if at all, affected. Cultures made from meningeal pus gave evidences of a mixed infection. Further study, however, isolated the diplococcus intracellularis, pneumococcus, and the colon bacillus.

Case V.—Female, age twenty-nine, an epileptic, had been in the insane department for five years, where she had been treated for anemia in addition to her mental condition. June 19, 1899, she developed erysipelas of the left foot and ankle, which in a few days spread to the thigh and hip. The usual clinical features of the disease were observed, and two weeks later, when apparently doing well, she died.

Necropsy disclosed what had apparently been a diffuse abscess of ankle. Spleen was enlarged, dark, and firm. Meninges were congested over cortex, while at the base they appeared normal. The ventricles were filled with a yellowish fluid, the choroid plexus were coiled tightly into solid masses, and were covered with pus. Ependyma of the lateral ventricle was smooth, while that of the fourth ventricle was covered with yellow pus. On section the hemispheres presented no gross lesions.

Bacteriology: Cover-slips smeared with pus from ventricles showed streptococci, as did also cultures made on blood serum and bouillon; no cultures were made from the abscess of the ankle.

Case VI.—Female, past middle life, was admitted to the hospital suffering from marked mental depression, answering questions by yes or no, speech drawling. Temperature 99° F., irregular in type, 102° F. being the highest point reached. The friends gave a history of severe headache and pain in the back of the neck for the past week. The head was retracted so firmly as to make it impossible to force the chin forward on the chest. The skin presented a bluish mottling over the shoulders, arms, and right leg. Pupils contracted but reacting to light; heart beats 120 per minute; lungs negative; arms rigid; knee-jerks absent; plantar reflex present. Two days later patient was seen to be in a state of pronounced catalepsy, especially marked in the right arm. Urine contained albumin and many granular casts. Her condition grew gradually worse and she died in coma on the seventh day after entering the hospital.

Necropsy: Liver small and sclerotic; spleen slightly enlarged and soft; kidneys presented some acute inflammatory change. Dura mater was adherent to valvarium. Everywhere the pia mater was edematous, its vessels prominent, and over the convexity was seen a slightly turbid gelatinous material. Reflected over the central portion of the cerebellar hemispheres, as well as over the pons and temporal lobes, there was a thick, cream-like, purulent exudate. Ventricles contained a turbid fluid. Ependyma was smooth, puncta vasculosa well marked. The frontal sinus contained a small thrombosus.

Bacteriology: Cover-slip preparations from meningeal pus contained bacilli which stained readily with aniline-gentian violet, but not by Gram's method; they were not situated in the pus-cells. Cultures, six in all, were made on Löffler's blood serum and glycerin-agar. Two from frontal sinus and three from meningeal pus remained sterile after forty-eight hours at a temperature of 37° C. One serum culture made from fissure of Sylvius presented a profuse growth of the colon bacillus.

The delirium in Case I resembled that of alcoholism, and in one other instance did it assume this form.[1] The fact that two of the cultures presented no growth was probably due to too large an amount of toxins being carried by the inoculating needle into the culture tube. This is

[1] Medical Record, Sept. 2, 1899.

probably why we so often hear that the meningeal exudate may contain many diplococci and yet cultures from this source give negative results, and that the meningococci are often dead or of low vitality. This is not true alone of the diplococcus intracellularis, but of many forms of bacteria, where we, overanxious to secure a growth, defeat our own object by bathing the surface of the culture medium with toxins which are powerful antiseptics. I have found that inoculation from a tube containing bouillon into which some of the purulent exudate has been placed gives good results in certain cases. Case II is of interest since he presented no symptoms of meningitis until twenty-four hours before death. Here the meninges were probably invaded by pyogenic cocci several days after the receipt of the injury. Cases III and V are fair examples of meninges secondary to a streptococcus infection elsewhere in the body. Case IV presented Kernig's sign which, according to Netter, is present in ninety per cent. of all cases where the meninges of the spinal cord are involved. Moderate leucocytosis is an almost constant symptom. Councilman, Mallory, and Wright[1] have seen the white cells reach 31,000 per cm. It is to be regretted that a differential count was not made in this case. The presence of the colon bacillus in the meninges is of no special interest, as the body had been dead twenty-four hours before necropsy; it has been my privilege, however, to study a case where no other bacterium was found.[2 3] I was not present at the autopsy on the body of Case VI., and do not know by whom the cultures were made. I am, therefore, inclined to regard the presence of the colon bacillus (one culture) as a probable contamination. The bacilli found on cover-slips that were smeared with the meningeal pus, were doubtless the exciting organisms, and possibly gave no evidence of growth in any of the cultures.

THE LEGISLATION NEEDED IN REGARD TO APPARENT DEATH.[4]

BY HENRY J. GARRIGUES, A.M., M.D.,
OF NEW YORK.

I.

ALL laws, rules and regulation governing the treatment of the dead in the city of New York, and I have no doubt the same holds good for the whole State, are only intended to protect the community, and they leave entirely out of consideration the thought that perhaps the person supposed to be dead is not so in reality. Even the very latest Sanitary Code, that of 1898, does not require that the occurrence of death shall be ascertained by a physician.

The blank for a certificate of death at the present date reads:

I hereby certify that I attended deceased from ....19 to ....19 , that I last saw .... alive on the .... day of ....19 , that .... died on the .... day of ....19 , about .... o'clock A.M., or P.M., and that to the best of my knowledge and belief, the cause of .... death was as hereunder written.

Duration of Disease.

Chief Cause .....
Contributing Cause .....
Sanitary Observations ..
Witness my hand this .... day of ....19 .
(Signature),
....., M.D.
Residence,
.....

It will be seen from this that it is left to laymen to decide that death has occurred, and *the physician need not even see the body of the supposed dead person.* All that is required of him is to state from what disease the deceased suffered, how long it lasted, and when he last saw the patient alive.

The Sanitary Code prescribes only that no body shall be buried without a permit (Section 170); that the body shall be buried to the depth of six feet below the surface of the ground and four feet below any closely adjacent street (Section 171); that the undertaker must register name and address (Section 172); that no person shall retain, expose, or allow to be retained or exposed, the dead body of any human being to the peril or prejudice of the life or health of any person (Section 175); and that no person shall allow to be retained unburied the dead body of any human being for a longer time than four days, or, where such death has been caused by a contagious disease, for a longer time than twenty-four hours after death of such person, without a permit from the Sanitary Superintendent or the Assistant Sanitary Superintendents (Section 177). Bodies of persons who have died from a contagious disease shall be disinfected and wrapped in a sheet saturated with a proper disinfecting solution, and placed in a coffin or casket which is to be immediately and permanently sealed (Section 155).

All is in favor of the survivor, not the slightest protection is accorded to the supposed dead. From the moment the householder has declared him to be dead he loses all rights in this world. The physician may sign the certificate of his death without giving a single reason, and without glancing at his body. And when the certificate is signed by the doctor and does not contain any suspicious circumstance the permit for burial is issued by the Board of Health. And still we shall presently see that the question whether a person is dead or alive may be one of the most difficult to decide and requires the nicest physical and physiological tests.

II.

What is Death?—According to the definition

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[1] Massachusetts State Board Health Report, 1898.
[2] International Medical Magazine, Nov. 1898.
[3] Cases I, II, and III, reported through the courtesy of Dr. Wadsworth, coroner's physician, who conducted the post-mortems; and Cases V and VI, through that of Drs. D. E. Hughes and J. Hendrie Lloyd, respectively.
[4] Read before the Society of Medical Jurisprudence.

of the Century Dictionary it is "that state of a being, animal or vegetable, in which there is a total and permanent cessation of all the vital functions." *Total* and *permanent*, here lies the difficulty. Some of the more striking vital functions may be paralyzed, and still the spark of life lie concealed in the body. A person may be in such condition that, if left to himself, the vital functions will be permanently extinct, and still by proper manipulations this same person may be brought back to life. This applies particularly to drowned persons, and perhaps even to electrocuted persons. Since Franklin's time we know that lightning and electricity are one and the same thing; and, since it has been proved that men and animals seemingly killed by lightning occasionally can be brought back to life, the logical inference is that perhaps a similar revival may be possible in a person exposed to a strong electric current.

Death is a gradual process. Even in a case of sudden death one literally dies by inches. Many have probably seen a headless chicken run and fly about in a barn-yard. If one chops off the head of a calf, for several minutes the severed head may be seen to exhibit convulsive movements and show all the signs of difficult breathing. If the tip of a finger be brought close to the eye, the eye will wink, just as does that of a live animal. If the cavity of the chest be opened the heart will be seen to continue to contract and relax for a long time. One may even cut out the heart altogether and place it under a glass shade, and still its regular movements continue, showing that it is not yet dead. This life of the organs is shown still more impressively by opening a large artery in a dog and letting him bleed to death. There comes a point when the dog dies, and would remain dead, if left to himself. But if the severed vessel be tied and blood from another dog is injected, the dead dog returns to life, and may continue living as long and in as perfect health as if he had not been subjected to any experimentation. This is due to the life remaining in the tissues which enables them, under the impulse of fresh blood, to resume all the suspended vital functions. The condition of this bloodless dog offers the greatest resemblance to that of a drowned man, and if it were only more generally known, and people would not take for granted that because a person is drawn cold and limp out of the water he is dead, but would use proper means of reviving him, many so-called drowned human beings might be restored to life, as illustrated by the following example: A young man fell one day into the Seine, at Paris, and disappeared under the surface of the water. Twenty minutes elapsed before the body was found. Pale, cold, limp, motionless, insensible, with thick, blue lips and open staring eyes, was it pulled out. Everybody thought the man was dead, except Dr. Bourgeois, who, amidst the jeering laughter of the mob, began to try to revive the supposed corpse. Several hours passed before the slightest sign of life appeared, and still the intelligent and humane efforts of the physician were in the end crowned with success.

When is a person really dead? Not necessarily when he does not breathe, nor when his heart has stopped beating, nor when he would remain lifeless if nothing were done to revive him, but only when the vital functions have been totally and permanently abolished. The most common causes of apparent death are asphyxia, heart failure, cerebral congestion or apoplexy, exposure to cold, a stroke of lightning, intoxication, anesthetics, and bodily injuries, combined with concussion of the brain..

The first observer who made a scientific investigation of the signs of death was the renowned anatomist, Winslow, a Dane by birth, who became professor at the University of Paris. He had particular reason to be interested in this question, since twice he had been taken for dead and laid out as a corpse. He came to the conclusion that of all signs of death there is only one which is reliable, namely, putrefaction. His contemporary, the great surgeon, Louis, combated his views and wrote a learned work on the certainty of the signs of death. But through a strange irony of fate it was reserved for this same man to publish a case showing that both doctors and nurses may be mistaken in regard to real and apparent death. A woman, who had been confined two days before in the Hotel-Dieu Hospital of Paris, dreading, on account of an epidemic, to stay in the hospital, went on foot to the Salpétrière Hospital, a considerable distance, where she arrived so exhausted that she fainted. The attendants succeeded in bringing her too, but soon she relapsed and was thought to be dead. The nurses reported to the physicians, that they might remove the corpse. It was left for two hours on a stretcher in the yard, and was then placed in the dissecting-room, where it was left over night. The following morning a young surgeon came to Louis and reported that he, during the night, had heard groans and sobs, but had been afraid to rise. Louis repaired immediately to the dissecting-room, and found the woman dead indeed, but in a position that showed in a most unequivocal way that she had been alive during the night. She had thrown off the shroud, one leg had been stretched from the bier and rested on the floor, and one arm leaned against one of the wooden horses that supported the boards. It was then evident that the poor woman, some time during the night, had awaked from her lethargy, had moaned and sobbed, and tried to rise, until she finally had succumbed to bodily exhaustion and mental anguish, and had become the prey of death. Now she was really dead, before she had only been so apparently.

Since the time of Winslow and Louis the question of apparent death has repeatedly been taken up in France and Italy, countries in which the law prescribes speedy interment, and competent men have been trying to find reliable signs of death before the appearance of dissolution.

III.

Signs of Death.—Among all the signs of death the one that from of old has made the strongest impression on mankind is the cessation of respiration. In all languages we find expressions like these, "to draw the last breath," or "to expire" as synonyms of dying. But people may not breathe and still be alive. In India, monks have the power of entering into a trance during which they have been kept buried for six weeks, and still been revived. New-born children often remain silent for a long time. I have myself worked for two hours and a half with such a child before it began to breathe. Breathing may also be so weak that it is difficult to ascertain. Then a mirror is held before the mouth in order to see the condensed vapor in the breath cloud the surface of the glass. Or a light feather or a flame, is held near to the mouth in the hope of seeing them move. Or a glass brimful with water or quicksilver is placed on the chest in such a way that the slightest movement would cause an overflow. The best of all these tests is, however, the stethoscope or the phonendoscope, instruments by means of which a very faint sound can be heard.

Another sign of death is the arrest of the circulation of the blood. We feel for the pulsation at the wrist, or at the apex of the heart, or, still better, we apply the above-mentioned instruments, by means of which we have a characteristic double sound, caused by the contraction of the heart. A commission appointed in Paris, in 1837, declared the absence during two minutes of any heart sounds to be a certain sign of death, but numerous cases have proved the fallibility of this statement. Of the large number we can only refer to a few.

Dr. Tournier of Paris was, in 1836, called in haste to General Baron von V., a man of eighty, who was supposed to have died suddenly. He found the old man lying on his back with open eyes and mouth. The body was motionless. A mirror held before the mouth was not dimmed. The flame of a match remained unmoved by any breath, nor did it evoke any sign of pain when applied to the nostrils. The dilated pupils did not contract on the approach of a strong light. A careful auscultation did not reveal the slightest respiratory murmur nor any contractions of the heart. Everybody, inclusive of the doctor, held the man for dead, but six hours later he turned over and asked where he was, and he lived two days longer.

The celebrated Parisian physician, Brachet, has published the following case: A man did not feel very well and fainted. The pulse could not be felt, nor were the heart sounds audible, although the stethoscope was applied for three minutes. During the following eight minutes Brachet examined repeatedly the pulse and the heart, without finding the least trace of circulation. In the meantime strong stimulants were applied, and when some ether was poured into the nose, a slight movement of the upper lip was elicited. Twenty minutes elapsed before the heart began to beat, and still the patient recovered entirely.

In another case of apparent death, Andral, also a celebrity of the Faculty of Paris, during six hours could not hear the slightest heart sound.

Besides the tests already mentioned there are others used to ascertain the existence of circulation. If, for instance, a thread be tightened round the finger of a living being the latter will become blue, because the constriction prevents the venous blood from flowing back to the heart, while arterial blood continues to flow in through the deeper vessels. Nothing of the kind takes place after death. But the test is of little value, since it fails in living persons whose heart is too weak to propel the arterial blood into the capillaries of the fingers, as after severe hemorrhage or in cases of advanced consumption. If one pushes a needle into tissues rich in blood-vessels, such as the tongue, the lips, or the cheeks, a drop of blood will escape; not so in the dead; but after a heavy loss of blood none will show in the living either. A similar test on a greater scale is to cup the abdomen. But when in cases of suspended animation the action of the heart is interrupted, there is no blood in the capillaries of the skin, and we do not obtain any, even by cupping.

If ammonia is injected under the skin of a living being a large, dark spot appears; not so in the dead; but there is the same exception to be made as in the preceding test.

After death the arteries become empty, and if we cut one no blood will flow, whereas it will do so in the living. But even this is not quite sure. Thus, Brachet has reported the case of a newborn child, whose body was entirely limp. No pulsation could be felt or heard during several minutes, and no blood flowed from the cut navel cord, and still, by insufflation of air into the lungs the doctor succeeded in reviving the child. After twenty minutes the heart began to beat, and in turn the other vital functions appeared.

The advice has been given to push a long, fine needle into the heart, the slightest movement of which will produce a visible excursion of the outer end. This has been done without harm in animals, but in man it has not been tried, as far as I know.

A valuable sign of death is the purple color assumed by the dependent parts of a dead body. But a similar discoloration has been found in cholera patients before death. It is also found in scurvy, and might be due to contusion.

Another good sign of death is the parchment-like appearance of places denuded of their epidermis, while such places in the living cannot become dry except when a scab has formed over them.

A most excellent sign is the so-called *rigor mortis*, or stiffness of death. Immediately after death the whole body relaxes, but in the course of from ten minutes to seven hours this limpness is replaced by a peculiar stiffness of all the mus-

cles, which can only be overcome by a certain degree of force—and continues for a day or two—until beginning putrefaction, when the former pliability returns.

The only condition which might be mistaken for rigor is that stiffness that is found in persons who are stiff-frozen without being dead, a condition from which people have been recalled to life even at the end of two days. But it is said that a frozen limb on being bent emits a sound like that heard on bending a stick of tin, and which is produced by the crushing of ice crystals.

Only gross ignorance could confound rigor with the stiffness due to tetanus. When rigor is present I take it to be an infallible sign of death, but it may be absent. When a hammer or other object of metal with a suitable handle is dipped in boiling water and then applied to the skin of a living person as a rule it causes the epidermis to be raised in a blister, surrounded by a red circle, while no such reaction, as a rule, takes place in a dead body. But there are exceptions in both directions. In a hydropic person or on a swollen limb the vesicle may be formed even on the dead body, and, on the other hand, it may not appear in very lean and decrepit individuals.

The most irrefutable, and, in the opinion of many, the only absolutely reliable sign of death is putrefaction of a vital organ. In most cases decomposition begins from one to three days after death. A greenish color appears in the groins and extends gradually over the whole body. The corpse emits a disagreeable odor. The tissues become softer. Gases are developed in the interior of the body. The epidermis forms vesicles which burst and expose the denuded skin. The process of disintegration is a slow one, but we need not follow it, since the already mentioned features of it are sufficient proof of real death. These seven tests are simple and of great value.

In another group I have placed other tests which either are less reliable or are more difficult to apply. *Pallor, immobility,* and *insensibility* are, of course, very deceptive. A striking case in point is that of the French cardinal, Monseigneur Donnet, who, when a member of the Senate tried hard to obtain better legislation for the protection of the apparently dead. When a young man he swooned one day while preaching to a large congregation. He was believed to be dead. He could not see, but he could hear distinctly everything; and we can imagine his horror when, unable to move a limb or utter a sound, he heard the tolling of the church-bell proclaim his death. The physician declared he was dead and signed the permit to bury him. The bishop came and, standing at his feet, recited the solemn *de profundis.* The carpenter measured his body for the coffin. But, finally, the voice of a dear friend of his youth made so profound an impression on him that he awoke from his lethargy.

When we hold the hand up against the light, the flesh of the fingers becomes translucent; not so in the dead. But this translucency has been found lacking in people affected with cholera or malaria, or shortly before death; and on the other hand it has been found present two days after death.

Immediately after death the temperature of the body often increases a little, but after that it sinks about one degree per hour, until it becomes like that of the surrounding air; but in cases of apparent death the temperature may also be very low, and after real death it remains occasionally high for days and the cheeks may remain red.

The appearance of the eyes has attracted considerable attention both from laymen and oculists. At the moment of death, the pupil becomes much dilated and remains so for hours. It does not contract at the approach of light, nor does it respond in the usual way to the instillation of eserine or belladonna—the first of which drugs causes contraction, and the second dilatation. Some time after death the cornea becomes dull, the conjunctiva is covered with a thick mucus, the ball softens and sinks back in the orbit. Black spots appear on the sclerotic. Ophthalmoscopic examination shows the vessels of the retina of a uniform pink color, whereas in life the arteries are bright red, and the veins dark brown. Still later the blood-vessels present a rosary-like appearance, due to the presence of air vesicles in their interior. But a renowned oculist has told me that toward the end of life the cornea becomes so dim that one cannot see the retina distinctly. A solution of fluorescine, injected hypodermically, makes the sclerotic green in the living, but does not cause any change in the dead body. The other changes in the eye enumerated above are not reliable or suppose a familiarity with the use of the ophthalmoscope, which even few physicians possess. I have, for instance, seen the white turn black in patients affected with Asiatic cholera, and the dilatation of the pupil may be due to belladonna.

Living muscles contract on the application of an electric current, a contractility which is lost in from one and a half to twenty-seven hours after the death of the individual. Absence of contractility would then prove that the person was dead, but its presence would not prove that he was alive. In fact, it was by observing the contractions in the legs of dead frogs that Galvani first discovered that form of electricity which bears his name. A needle thrust into living tissue becomes rusty much sooner than when inserted into a dead body. Attention has been called to a peculiar buzzing sound which is heard when we apply the ear to the chest or the hand of a living person, and which we also hear in our own body when we insert a finger into the auditory canal. This sound ceases twelve or fourteen hours after death; but in cases of apparent death the vitality is so low that the sound likewise discontinues.

IV.

According to the unanimous testimony of those who have been victims of apparent death but

have been rescued in time from the horrors of live-burial, the sense of hearing remains unimpaired. They could hear every word said while they were in their trance, but it was absolutely impossible for them, in spite of the greatest mental effort to move a limb or in any way to convince the by-standers of their terrible mistake.

Some adversaries of the movement to protect the apparently dead have pretended that even if a person were buried alive there would be no suffering, that he would be smothered almost instantaneously in the coffin, and that all the cases in which coffins had been opened and the bodies found distorted were due to post-mortem changes in the corpse. But this specious plea does not hold good at all, and recently there has been an opportunity to almost experimentally show the sufferings of persons buried alive. In the village of Ternowa, in Southern Russia, there lived a family by the name of Kowalew, who became the center of a little sect, whose members, among other things, refused to give any information to the officials charged with taking a census in 1896. Voluntarily they had themselves walled in by batches in a cave. When, finally, the horrible act was discovered and the graves were opened, it was found that while the very old people and children seemed to have succumbed with comparative ease, the young women displayed fearfully contorted features and stood in postures showing that they actually had tried, in vain, to burst the vault that separated them from the outer world. No, there is no use denying the fact that people apparently dead have suffered the most intense anguish, while preparations were made for their burial, and the most profound despair and physical pain after having been buried alive.

In the city of New York there is not much danger, at least among those who own a few dollars, of being buried alive. The absolutely destitute will probably find their way to a dissecting-room, and the others will be cared for by undertakers, who will place them in an ice-box, and effectually extinguish what spark of life may yet lurk in their inner tissues. Many years ago I treated a beautiful young woman for consumption. When I was called to see her she was already near her end, but imagine my surprise when, one winter morning, during a severe frost, I came and found my patient laid out as a corpse on the floor in a room, all the windows of which had been opened. When I applied the stethoscope to her chest and listened, I could yet distinguish the above-mentioned buzzing sound, although breathing and heart sounds had stopped. I do not doubt that she was dead, but suppose she had only fainted and been in a state of lethargy, to expose her to the low temperature of a northern winter was certainly a sure means of extinguishing the ebbing life. Another case was that of a man, affected with spinal disease. He was paralyzed in both legs and had often intense attacks of dyspnea. During such an attack I was sent for. I was not in, but soon returned, and hastened to the house, which I reached in less than two hours, and still I was late. In the parlor I found the wife bathed in tears and surrounded by sympathizing friends. In the next room I found the undertakers busily engaged in preparing the still warm body for burial. With great difficulty I obtained the opportunity to look for some signs of death. It was half-past ten in the evening. The undertaker and his men were in a hurry to go home or to the saloon, and placed the yet warm body on ice in an almost hermetically-tight box. Such cases are by no means exceptional. Many people have an almost superstitious respect for—or shall we say fear of—the dead. Undertakers display night-bells much more conspicuously than physicians do. A person has scarcely drawn the last breath before the survivors, in the middle of the night, send for an undertaker, who hauls the supposed dead body out of bed, throws it on hard, rough boards, and shuts it up in an ice-box. Nobody even thinks of doubting if he is really dead or not. As soon as one stops breathing, he is surrendered to the tender mercy of the undertaker. And all this in the face of the fact that it is a delicate scientific question to decide whether a person is dead or not.

V.

If it is possible for a competent physician, without waiting for decomposition to set in, to decide whether a person is dead, this is certainly not the case with laymen. It is, therefore, a radical fault in all legislation governing dead bodies that it is left to laymen to decide if death has taken place, that the possibility of apparent death is lost sight of, and that no protection whatever is accorded the supposed dead against ill-treatment, injury, suffering, nay, manslaughter at the hands of the survivors.

First of all the right to decide whether a man is dead or not should not be given to those who happen to be present when he stops breathing, but only to certain individuals, particularly fit by knowledge and training to make the necessary examination. In some European cities there are specially appointed physicians, whose duty it is to view the body and give the certificate of death. Such a system, as all specialization, has the advantage that such physicians would have exceptionally favorable opportunities for studying the signs of death and finding new ones, and that they would acquire exceptional experience in the distinction between true and apparent death. On the other hand, such a system has its drawbacks. The election or appointment to such a position would depend on political affiliation and influence, and physicians who deal much with politics are rarely distinguished for their professional attainments. Secondly, such officials would probably be so overloaded with work that they would be tempted to fulfil their duties in a perfunctory way, which, the writer is informed, is the case in France, where this system is in use in large cities. And, thirdly, they would lack all personal knowledge of the defunct.

In my opinion it might safely be left with the ordinary legally authorized practitioners of medicine to decide if a person is dead, but they ought to be held to perform this duty in a way befitting the enormous responsibility they incur. The certificate of death ought to contain the declaration that they personally have inspected the dead body, and a false statement in this respect should be severely punished. Next, some of the most important and simple signs of death should be enumerated in the blank, and the physician who signs it should be compelled to testify to the presence or absence of every one of them.

I do not know if the rural parts of the State are sufficiently furnished with physicians that such a certificate could be required everywhere. I am, however, inclined to believe it. According to the census of 1890 the State of New York had 5,997,855 inhabitants and 11,139 physicians, that is a physician for every 538 inhabitants; and it would, therefore, seem an easy matter for the physicians to attend to this matter. But if in some places the distance would be so great that the expense of such a certificate would become exorbitant, proper laymen might in such localities be appointed as inspectors of the dead and have the right to fill out and sign the death certificate, but in such cases putrefaction should be the only admissible sign of death.

Furthermore, the law should prescribe that until a certificate of death has been filled out and signed by the proper authority, the supposed dead is to be treated as living, and it should be made a crime to treat him in any way that would cause him pain or do him harm if he were alive. That would put an end to the abominable placing on ice, or hauling the body out of bed and removing it to an ice-cold room, or carrying it into the yard. Until some such law is passed none of us is sure that he will not be buried alive or killed by an undertaker.

Recently Mr. Emile Camis of Paris has, in several scientific societies, exhibited the apparatus invented by the Russian Count Carnice Karnicki, in order to give aid to those who have been prematurely buried. It is very ingenious and simple of construction. A metal tube is inserted in the cover of the coffin, and as soon as the apparently dead revives and moves he raises a large metal ball, sets a bell ringing, fires a shot, and admits air and light into his coffin. As long as we have such delusive protection against live burials, such a contrivance must be welcomed, but think of the horrible situation of a person who awakes six feet under earth and finds himself in a narrow coffin. Much more satisfactory would waiting mortuaries be, where the bodies are kept until decomposition begins. It is true, it is often said, that nobody ever revived in such establishments, but Gaubert[1] says that fourteen cases have occurred in Germany, and he quotes a letter written by Ehrhardt, Mayor of Munich, in which he declares that several persons who were believed to be dead had returned to life in the Waiting Mortuary of that city. But if the apathy of the public in general, and, not least, of the medical profession is too great to introduce such institutions that are expensive and entail a change of habits that would be distasteful to many, let us at least use ordinary precautions in order to avoid the terrible mistake of consigning a living person to his grave.

716 Lexington Avenue.

[1] Les Chambres mortuaires d'attente, p. 182.

CLINICAL MEMORANDUM.

LIGATION OF THE FIRST PORTION OF THE RIGHT SUBCLAVIAN FOR ANEURISM OF THE THIRD PORTION.[1]

BY A. E. HALSTEAD, M.D.,
OF CHICAGO.

MRS. F. W., American, aged forty-four years, married; family history, negative; has had three children, the first two being twins. Of these, one died at the age of three months from some unknown cause; the other at six years, from diphtheria. The third child lived two weeks. Has not had any miscarriages nor premature labors. Has had no illnesses excepting the ordinary diseases of childhood, and diphtheria at the age of nineteen. Patient denies having had venereal disease, although she has had treatment for some uterine trouble. The present illness began insidiously about nine months ago without any known cause. She first noticed a feeling of numbness and tingling in the ring and little fingers of the right hand. After about three months she began to have cramp-like pains referred principally to the inner side of the arm and forearm. This was soon followed by shooting and throbbing pains along the posterior surface of the arm and in the right shoulder immediately under the inferior angle of the scapula. These pains at first were paroxysmal in character, but lately have become nearly constant, so that her rest has been broken and her appetite impaired.

Examination shows a fairly well-nourished individual, with a somewhat rapid and irregular pulse. Just above the right clavicle in the subclavian triangle is a tumor, more prominent when the patient is erect than when reclining. This tumor is somewhat smaller than a hen's egg, globular in shape, soft and easily compressible. On palpation a well-marked expansile pulsation synchronous with the systole of the heart can be felt. On auscultation a distinct bruit can be heard. The radial pulse on the right side is perceptibly slower and smaller than on the left.

An operation was performed November 8, 1899, at the Chicago Policlinic Hospital, with the assistance by Drs. J. E. Best, F. S. Coolidge, and P. F. Morf. A curved incision with the convexity downward was made, beginning just above the suprasternal notch and ending externally about two centimeters above the deltoid tubercle of the clavicle, the lowest point being about three

[1] Read at a meeting of the Chicago Medical Society, February 7, 1900.

centimeters below the clavicle. A flap consisting of skin, platysma, and fascia was reflected, fully exposing the subclavian triangle and the origin of the sternomastoid muscle. This muscle, with the sternohyoid and sternothyroid, was divided transversely just above the clavicle, and the internal jugular vein and carotid artery exposed. The carotid artery, and the pneumogastric and recurrent laryngeal nerves were retracted inward while the internal jugular and innominate veins were retracted outward, exposing the lower part of the scalenus anticus muscle. Close to the inner edge of the scalenus anticus, but considerably deeper, the vertebral artery could be located. The thyroid axis was found three-eighths of an inch external to the vertebral. This was traced downward until the subclavian was reached. The sheath of the subclavian was incised for a distance of about one-half of an inch just internal to the point of origin of the vertebral. An attempt was made to pass a ligature about the artery at this point. In doing so the posterior wall of the artery ruptured, giving rise to a profuse hemorrhage which completely obscured the operative field. Several attempts were made to pass the ligature, but as soon as pressure was removed from the artery the hemorrhage recurred. This necessitated the ligature of the artery some distance below the point of rupture, which could not be accomplished without resection of the clavicle. Accordingly, the clavicle was divided about two inches from the sternoclavicular articulation, the sternoclavicular ligaments severed and the clavicle reflected downward. This did not seem to improve materially the situation, so that the inner fragment of the clavicle was removed and with it the upper angle of the sternum. This gave ample room. The artery could now be exposed for a distance of about two inches from the internal border of the scalenus. All of the structures in relation to this portion of the vessel could be easily identified. Three catgut ligatures were quickly placed about the artery and tied, two of these being proximal and one distal to the point of rupture of the artery. This distal ligature had to be placed very close to the vertebral artery. The two ligatures proximal to the point of rupture were placed about three-quarters of an inch apart, and were all tied so as to occlude the vessel, but not to rupture its coats. After the ligatures of the vessel had been completed and the operation-wound sponged dry, the artery could be traced downward and backward for a distance of about three inches from the inner border of the scalenus anticus. In place of there being a common trunk, from which the carotid and subclavian were given off, the latter seemed to pass behind the carotid and come directly from the arch of the aorta. No brachiocephalic trunk could be seen. The relation of the origin of the subclavian to that of the carotid could not be determined. The divided muscles were sutured and the wound closed without drainage. The patient's temperature never rose above 99.5° F.; the pulse, which previous to the operation had ranged from 118 to 130, gradually dropped to normal during the first ten days. The skin-sutures were removed on the fifteenth day, when the wound was found healed by primary union. The patient complained some of the arm and hand feeling cold during the first two weeks. The pain in the arm and hand which was so annoying before the operation has completely disappeared. There is no radial pulse, nor any return of pulsation in the aneurism up to the present time (seven weeks after the operation).

Several points in connection with this case are worthy of consideration:

1. The aneurism involved the entire third portion of the subclavian and encroached slightly upon the second portion, so that the only rational method of treatment was ligation of the first part.

2. The anomalous position of the subclavian vein, which was found above the artery throughout its whole course. Owing to this position of the vein, it was torn while endeavoring to retract it downward so as to reach the artery external to the internal jugular. As a result of this accident a considerable amount of time was consumed before the hemorrhage could be controlled by lateral ligation of the vein.

3. The anomalous origin of the right subclavian and the unusual depth of this vessel were for a time very confusing.

4. The possibility of having to resect the clavicle was considered before the operation. It was determined to ligate the vessel without, if possible. I now considered it a necessary step and strongly recommended preliminary resection of the clavicle and a portion of the sternum in all cases. In my opinion it makes very little difference whether the portion of the clavicle which is resected is restored or not. In the case just reported the patient had an almost perfect clavicle at the end of six weeks, although the inner third together with the upper end of the sternum had been removed.

5. The ligatures employed in this case were of formaldehyde catgut. The suggestion of Souchon of applying two or three non-contiguous absorbable ligatures should be followed in all cases. The ordinary surgeon's knot is all that is required. The ligatures should be drawn sufficiently tight to occlude the vessel, which can be determined by cessation of pulsation in the aneurism, and not tight enough to rupture the arterial wall.

6. Probably the most important factor in securing favorable results in these cases is the preservation of an aseptic condition of the wound.

7. As regards the results thus far obtained in the ligation of the first portion of the right subclavian, this case is, it is believed, the second on record where the patient survived the operation.

Bequest to the Presbyterian Hospital.—Through the generosity of the late Mr. A. G. Cone, the Presbyterian Hospital, Chicago, will shortly receive $135,000.

MEDICAL PROGRESS.

Early Diagnosis of Tuberculosis.—Since it has become the rule to examine the sputum of all doubtful cases many errors in diagnosis are avoided. M. Henkel (*Münch. med. Woch.*, March 27, 1900) points out, however, that frequently no expectoration can be obtained. When the physical examination of the apices is negative in these cases it is important to remember that not infrequently the tuberculous deposits may have their seats in other parts of the lung, such as the lower lobes. The first signs, as a rule, are obtained by auscultation and consist in a dry, creaking sound, often of musical character heard best in the supraspinous or infraspinous fossa or in the intrascapular region. A slight evening rise of temperature is rather suggestive. Finally, where all other means fail, direct aspiration of the lung may be practised and the obtained blood examined for bacilli. If done slowly and carefully this procedure is never attended with danger.

Prognosis of Brain Syphilis.—The phenomena produced by brain syphilis, says C. J. Aldrich (*Cleveland Med. Gaz.*, April, 1900), are so capricious and variable that the general laws of prognosis in acute brain disease hold good in specific lesions to a limited extent only. Youth, alcoholism, and especially excessive venery, induce a peculiar liability to cerebral syphilis. In the young the recuperative powers cause ready response to treatment, but the last two conditions call for a grave prognosis. The underfed, overworked and delicate, living with poor hygienic surroundings, do badly. Females are less liable to acute softening than males. Acute softening and hemorrhage are the same as from any other cause, yet syphilitic apoplexies are seldom rapidly fatal, may recur several times, and may be followed by little, if any, permanent injury. In syphilis of the convexity, or in the localized convulsive seizures of a Jacksonian epilepsy, the prognosis is good. In all cases the lesions of the secondary stage tend to respond readily to treatment, but the tertiary lesions are very resistant. Although the cure is apparently complete, relapses are common, and the cicatricial tissue replacing the lesion may at any time cause pressure by its contraction and result in permanent injury. Lesions often persist because iodide is given in too small doses. It should be administered in rapidly increasing doses up to three drams a day.

Addison's Disease.—L. Huismans (*Münch. med. Woch.*, March 27, 1900) reports several interesting cases of this disease. In the first patient the onset was very insidious, with gastric symptoms. The post-mortem showed extreme atrophy of the suprarenals, a small tuberculous focus in one of the poles of the right organ and a marked contraction of the entire intestinal tract. The second case cited developed a subphrenic abscess which was found to communicate with a large deposit in the left suprarenal, while clinically a remittent fever, meteorism, and general typhoid state set in prior to death. In these two cases no changes were found in the celiac ganglia. In conclusion the author proposes a new theory to explain the symptoms of Addison's disease. He believes that certain toxic substances, such as pyrocatechin, phosphoric and lactic acid, are developed in the intestines and muscles and that these are altered in the suprarenals and there prepared for excretion. When for any reason the suprarenal tissue is destroyed, these substances will remain in the system and lead to a chronic intoxication.

Diagnosis of Pneumonia.—In the *Medical Review* (March 31, 1900) L. H. Behrens has reported two cases which proved to be lobar pneumonia, but which were very difficult to diagnosticate at the beginning on account of the peculiar and limited symptoms presented. In one the attack began suddenly, with paroxysms of sharp, lancinating pain over the precordium, extending to the left shoulder and down to the left arm. Physical examination was negative and the pains gradually ceased, to be followed in about three hours by another severe paroxysm similar to the first but with considerable pain in the epigastrium also. The temperature was practically normal for about fifteen hours, and a few moist râles at the end of twenty-six hours were the only physical signs present. Evidences of consolidation appeared in about forty-eight hours. In another case the onset of the disease closely simulated the excruciating pains accompanying the passage of a renal calculus, the pain centering over the kidneys and extending to the umbilicus, especially on the left side. This was followed in a few hours by pain in the epigastrium and vomiting, and, as the patient had been very alcoholic, the diagnosis of gastritis was made. Thirty-two hours after the onset a few crepitant râles could be discerned, but the temperature was still normal. The temperature remained low throughout; the delirium was marked, probably due to alcoholism, and the recovery very slow.

Alcoholism.—After a prolonged trial of the Keeley cure, the injection of strychnine nitrate, the use of methylol and of quinine and nitromuriatic acid, the Cery retreat for inebriates has adopted a treatment described by C. de Martines (*Revue méd. de la Suisse Rom.*, March 20, 1900). Almost always the patient during the first few days becomes violently agitated, throws things about and attempts to hurt himself and others, so, as restraint has a bad effect, he is allowed free movement in a room with padded walls and devoid of furniture. Two glasses of wine a day are allowed during the first week or two, but no longer. As soon as the mental excitement subsides, the patient is made to walk in fresh air until tired, and takes a warm bath for half to one hour each day. The only drugs used are chloral hydrate, twenty to thirty grains, to produce sleep, preferably given in a little wine or beer, or, if

this is refused, one-sixtieth of a grain of duboisine or hyoscine hypodermatically. Morphine is never employed as it is considered responsible for many untoward effects in the treatment of these cases. The bowels are regulated by artificial Carlsbad salt or other saline purgative. The lungs are examined every morning as at any time a pneumonia may develop. Any medication is more rapidly absorbed if it is given in a slightly alcoholic mixture.

Blood-Test for Syphilis.—Since the report of this test by Justus, an assistant in Schwimmer's clinic at Budapest, very little confirmatory work has been done except by Drs. Cabot and Mertins of Boston. Recently D. H. Jones (*N. Y. Med. Jour.*, April 7, 1900) has applied the test to fifty-three cases drawn from the service at Gouverneur and Bellevue Hospitals. The test depends on the asserted fact that a single inunction of mercury in all untreated cases of secondary, tertiary and congenital forms of syphilis causes a reduction in the hemoglobin, due to the sensitiveness of the red blood-corpuscles to the action of the drug, while in non-syphilitics, no reaction occurs. Of seventeen active syphilitics, thirteen responded and four were negative. One active case under treatment and two latent cases were also negative. Out of fifteen cases of chancre, only three responded, and all the control cases, eighteen in number, were negative. The result shows that the test is liable to fail in two classes of cases in which a diagnosis is especially desired, *viz.*, in latent cases and in early chancre and sometimes at the beginning of the secondary stage. The range of usefulness has not yet been worked out, however, and it is very likely that it may be a very valuable method of corroborating a diagnosis.

Chronic Carbon Monoxide Poisoning.—The acute cases of poisoning by carbon monoxide gas are numerous and usually easily recognizable. When the poison is slowly absorbed by the system for a considerable length of time, a chain of symptoms is liable to develop which does not by any means point clearly to the source of the trouble. T. J. Yarrow (*N. Y. Med. Jour.*, April 7, 1900) has seen a well-marked case of the above chronic condition and gives some valuable information in regard to the diagnosis of this malady. The symptoms, although sometimes vague, may be summed up as anemia, generally of a simple type, with or without leucocytosis, frontal headache, anorexia, tinnitus aurium, vertigo, foul taste in the mouth, abdominal pains, often of a colicky character, persistent disorder of digestion, and general lassitude. The carbon monoxide forms a very stable compound with the hemoglobin, interfering greatly with its oxygen-carrying power and giving a cherry-red color to the blood. This causes the florid countenance in acute cases but not the more chronic ones. Examination of the blood by the spectroscope is the only certain method of making the diagnosis, and consists in the dilution of a small quantity of blood with distilled water, followed by a direct examination of the fluid by the hand spectroscope or the microspectroscope. The absorption bands are noted and ammonium sulphide or Stokes reagent is then added, the mixture thoroughly stirred and slightly warmed. If carbon monoxide be present it will be found that the normal reduction to hemoglobin does not take place, but the absorption bands persist and are somewhat nearer the violet end than those of oxyhemoglobin. Several chemical tests may also be made. A small leak from the artificial gas-pipes is probably the most common cause of this condition, and in the crowded, poorly-ventilated tenements it is, no doubt, more often present than is supposed.

Whooping-Cough.—In the grave cases of pertussis, accompanied by frequent and severe vomiting, with consequent loss of flesh and strength, dependent upon prolonged spasm of the glottis, N. R. Norton (*Archives of Pediatrics*, April, 1900) advocates intubation. The paroxysm begins as usual with excitement, a desire for support, the spasmodic cough and even cyanosis, but when the inspiratory effort is made there can be no glottic spasm and the paroxysm terminates abruptly without the least distress or vomiting. Hard rubber intubation-tubes are preferable to metal ones as spicules of calcareous matter deposit upon the latter and cause excoriations and ulcerations. As general treatment for whooping-cough the author administers carbonic-acid gas by rectum. The gas is generated slowly by adding one-half ounce of tartaric acid in crystals to a solution of six drams of bicarbonate of sodium, and it is run into the rectum for about five minutes through a rectal tube three times a day. During the administration the skin is flushed and a mild diarrhea may be induced, but the severity and number of the paroxysms is reduced, and the vomiting ceases.

Kernig's Sign in Infants.—Although considering Kernig's sign of meningitis a valuable diagnostic aid in adults and older children, F. A. Packard (*Archives of Pediatrics*, April, 1900) warns against attaching too much importance to it in the infant. Two cases at sixteen months and one at four months, proven by autopsy to have had meningitis, failed to give the sign. One case at four months responded well to the test and autopsy showed no anatomical change in the meninges.

Uses of Creosote.—Tubercular inflammations of the lung are probably the common lesions in which creosote is employed and yet its usefulness is, no doubt, considerable in many other conditions. T. C. Test (*N. Y. Med. Jour.*, April 7, 1900) has reported some of his clinical observations on the action of this drug in other affections. Several cases of very obstinate intestinal fermentation, flatulence, and autointoxication, are cited, which were treated by ordinary digestive ferments and intestinal antiseptics without any material

benefit. Creosote, in doses of about one minim three or four times per day, well mixed with a preparation of malt, gave surprisingly good results. It is not known whether the action of this drug is a direct one on intestinal contents or an indirect one, as a glandular stimulant during elimination, but in such small doses the indirect action must be very slight. Several cases of whooping-cough were markedly improved by creosote and as an antemetic it sometimes proves very efficacious on account of its sedative action on mucous membranes.

Gouty Deposits.—So many physicians have been baffled in their attempts to cause the absorption of gouty deposits that new suggestions are always welcome. Believing that the local application of a solvent would be most beneficial E. L. H. McGinnis (*N. Y. Med. Jour.*, April 7, 1900) has used a solution of iodide of lithium applied to affected parts by means of absorbent cotton. The positive pole of a galvanic battery was then closely applied to the wetted cotton and a current of from ten to fifteen milliampères was used for from eight to ten minutes. This treatment was employed daily and within a very short time a marked diminution in the deposits resulted in the three cases reported by the author.

Analysis of Gastric Contents.—A new method of easily determining the amount of combined hydrochloric acid in the gastric juice is proposed by O. Cohnheim and H. Krieger (*Münch. med. Woch.*, March 20, 1900). The entire acidity is determined in 10 c.c. of the filtered fluid by the usual methods. A similar amount is then measured off and phosphotungstate of lime added. This has the property of reacting with acid albumin with the production of free hydrochloric acid and phosphotungstate of albumin which falls as a precipitate. On filtering, the hydrochloric acid can easily be determined, when, on deducing the result from the entire acidity, the amount of combined acid can readily be estimated.

Treatment of Whooping-Cough.—Chas. G. Kerley (*Archives of Pediatrics*, April, 1900) reports a study of various methods of treatment tested in 752 cases of pertussis. No treatment was used until the height of the paroxysmal stage had been reached, usually ten to fourteen days. The age was from six weeks to twenty-six years, half being less than two years. The attacks lasted from three to twenty weeks. The very young and the very delicate often did not whoop during severe attacks. Convulsions and hemorrhages from the nose, eyes and ears, or beneath the skin, were observed. No benefit was obtained from insufflations of resorcin and boric acid with bicarbonate of sodium; from inhalations of vapocresoline, or from alum, horse-chestnut leaves, or dilute nitric acid. Bromoform was of service in only three out of twenty-two cases; cocaine hydrochlorate, one-tenth grain every four hours for a two-year-old child, was of limited value. Quinine, twelve to twenty grains in twenty-four hours, was very efficacious, but tended to derange the stomach and produce vomiting, and was difficult to administer to young children on account of its bitter taste. Belladonna was tried in sixty cases and was pushed to its physiological limit without influencing a single case in the slightest degree. The bromides were of much value, and antipyrine was found to be the best of all the drugs employed. These last two drugs are well borne if given in tablet form or in syrup of raspberry on a full stomach, and, when given together, more effectively control the disease than either alone. The dose for a child of eight months is one-half grain of antipyrine and two grains of sodium bromide every two hours. A valuable addition to the drug treatment in the very young, or those with complicating bronchitis or bronchopneumonia, is the steam spray for fifteen minutes every two hours. Steam inhalations medicated with creosote, turpentine, or wine of ipecac, may be of some value. In every case abundance of fresh air is a requisite.

Preventive Operation in Appendicitis.—M. Moullin (*Edinburgh Med. Jour.*, April, 1900) says that every case of inflammation of the appendix even if it is catarrhal at first, becomes infective before many hours. The epithelium, which is the protecting barrier, is soon injured, and then the ever-present bacteria invade the wall. In even the mildest cases, microscopical examination shows the organisms in the lymphatics. At the onset of appendicitis, it is impossible to say what is to follow, gangrene, ulceration, perforation, septic lymphangitis, portal pyemia, or circumscribed abscess. In some of these cases preventive operation offers the only hope. In others operation must come at last. It, therefore, would seem perfectly fair to make an exploratory incision in the right iliac fossa and treat the appendix according to findings, very early in the attack, *i. e.*, before the onset of gangrene or suppuration would be apt to occur. If all the cases, which, under the present methods, finally come to operation, were operated upon before thirty-six hours have elapsed, some lives, which are now lost, would be saved, and there is no reason to think that any of them saved under prevailing methods would be exposed to additional risk. Some cases may never require operation. In the great majority of cases it is possible, by the end of thirty-six hours, to form a fairly accurate judgment of their gravity. The key is to be found not so much in the intensity of symptoms, as in the way they advance or recede. If the symptoms begin mildly and increase, or if they begin with severity and do not improve in thirty-six hours, or if sudden exacerbation occurs, suppuration is imminent. Increasing rapidity of pulse is invariable in grave cases, but the absence of one or more of the other so-called cardinal symptoms is of no importance. Operation must be preventive in the narrow sense of the term. Gangrene may occur in twenty-four hours, suppuration often in forty-eight.

Each case must be operated upon according to its merits. In many cases operated upon on the fourth or fifth day (so-called early operations) the abdomen is distended and the intestine paralyzed. These cases, which run up the mortality, are the ones which could be saved by a timely exploratory preventive operation.

Sterilizing the Hands and the Patient's Skin.—The tincture of green soap, according to Honel (*Beit. z. klin. Chir.*, vol. 26, p. 475), is an easy and sure method of sterilizing the hands before an operation. The hands should be thoroughly scrubbed with it for five minutes and then wiped, but not washed with water. If they remain slippery, they may be quickly rinsed in a solution of bichloride of mercury 1-1000. The skin of the patient may also be prepared in the same manner. Honel has tested this method in about two hundred cases and has found it satisfactory.

Sealing of Aseptic Wound.—H. O. Marcy (*Annals of Surgery*, April, 1900) believes that clean-cut operative dissection is a very important step toward obtaining primary union. For germs to grow it is necessary to have a favorable soil and this is produced by tearing, bungling, blunt dissection, clamping of much tisue, and tying of many ligatures. Therefore, not only should the operative field, the surgeon's hands and the instruments be rendered aseptic, but, at the end of operation, the tissues left in the patient should be as little damaged as possible. Like tissues should be closely apposed by buried, absorbable sutures, preferably of tendon soaked in 1-1000 bichloride, and finally the skin wound closed by an absorbable subcuticular suture. (Catgut and silk are discarded because their twisted surfaces give many crevices for the lodgment of infectious material.) Such perfect apposition, with physiological rest, gives rapid primary union, and very little serum exudes. Therefore, the heavy bungling dressings in common use should be dispensed with and iodoform collodion used. There is nothing to come out, and the collodion allows nothing to enter.

Conservative Operation on Fibroids.—W. L. Burrage (*Bost. Med. Surg. Jour.*, April 5, 1900) states his belief that all operations on the uterus and its adnexa should be strictly conservative. During menstrual life the uterus should be removed only when it is the seat of ineradicable disease, and fibroids should not be so classed except when they cause excessive distortion, or are so extensive that their removal would obliterate the uterine cavity. In women near or past the menopause, hysterectomy is preferable to myomectomy, especially when the cervix is much diseased. In cases of small submucous tumors, the cervical canal should be slowly dilated during the twenty-four hours preceding operation. The tumor is removed by twisting, snaring or morcellation. With a subperitoneal or subvaginal tumor in the cervical region, enucleation may be accomplished through an anterior or posterior colpotomy without opening the peritoneum. With other subperitoneal tumors laparotomy is necessary. The tumor is removed through a lateral incision in its capsule, and the wound closed by a continuous catgut suture. Electricity relieves pain and hemorrhage, but exerts no lasting effect on the tumor. Removal of the adnexa often fails to relieve. Ligature of the uterine arteries often fails because of the free collateral circulation. The adnexa are often diseased in fibroid cases. They can be appropriately treated at the time of a myomectomy. When necessary hemorrhage may be controlled by an elastic ligature about the cervix. Myomectomy requires more skill and longer time for its successful performance than does hysterectomy, a fact not to be lost sight of in operating on weak and exsanguinated patients.

Diazo-Reaction in Phthisis.—The diagnostic and prognostic value of Ehrlich's diazo-reaction when applied to cases of tuberculosis is made the basis of an interesting article by M. Michaelis in the *Berliner klinische Wochenschrift* (March 26, 1900). In the first place he divides all diseases into four groups with reference to their susceptibility to the diazo-test. These four groups are: (1) Those in which the diazo-reaction practically never occurs, *viz.*, spinal diseases; chronic organic affections, such as nephritis, endocarditis, malignant tumors, etc. When the reaction does take place in these diseases it is due to some secondary bacterial process, such as ulceration of a carcinoma, decubitus in spinal diseases, and so on. (2) This group of diseases is characterized by a positive diazo-reaction, such as typhus abdominalis, measles. (3) This group only rarely reacts to the diazo-test and when this is positive it prognosticates severe types of disease and complications. Pneumonia and diphtheria furnish us with examples. (4) The last group embraces all the tuberculous processes. Here the diazo-reaction is of special importance, both as to diagnosis and prognosis. When in patients without temperature we get continuous diazo-reactions, we may be almost certain that we are dealing with tuberculosis. As a means of differentiation between ascites due to cirrhosis or tuberculous peritonitis this is invaluable. Occasionally, however, peritoneal carcinoma reacts also to the test. Positive reaction in meningitis likewise points to a tuberculous origin of the affection. In miliary tuberculosis the test never fails. In pericarditis and serous pleurisy the reaction differentiates between the rheumatic and the tuberculous origin. It is chiefly in pulmonary tuberculosis, however, that the reaction is of high prognostic value. Those cases of phthisis which give absolute, undisguised, positive reactions to the diazo-test are to be considered fatal as to prognosis. The reagent used by Michaelis is the original one of Ehrlich:

Acid sulfanilic 2,5.....
Acid muriatici 25:500.. } ..Reagent A.
Natrii nitrosi 0,5:100.....Reagent B.

Of Reagent A., 49 c.c. are taken together with

1 ccm. of B. and well shaken. Then to about 10 c.c. of urine is added a like quantity of the reagent and again the mixture is well shaken. Finally, about one-eighth of the quantity of ammonia is added. Then, with positive results, a red coloration of the foam takes places. If the urine be allowed to stand for twenty-four hours a dark green precipitate will form. It is to be noted that the ammonia is to be added, not by drops, but the requisite quantity at once. The previous ingestion of certain drugs such as naphthalin, chysarobin, gallic acid, tannigen and tannalbin seems to prevent the reaction from taking place. The presence of a positive reaction is independent of fever, of the number of tubercle bacilli and of the quantity of the sputum. The diazo-test is rarely positive in mild cases of tuberculosis; and only when acute infections set in, which of themselves alone would give negative results, does the diazo-test give a positive reaction. Thus may we, in a seemingly benign influenza, pneumonia or pleurisy, be enabled to foresee a succeeding phthisis by means of a positive Ehrlich test. In those cases of phthisis with positive diazo-reaction, Michaelis has been able to prognosticate a fatal issue in the majority of cases within six months. In 167 heretofore observed cases of phthisis the following results have been drawn by him:

Negative diazo-reaction, cured 5, improved 44, unimproved 5, died 3; positive diazo-reaction, 15 improved, 16 unimproved and 80 died.

These statistics speak for themselves. Clemens also has shown that out of 100 of his cases of phthisis with fatal termination 87 gave continuous positive reactions with this test.

Operative Treatment of Spasmodic Torticollis.—From a review of the literature as well as a personal experience with 95 cases of spasmodic torticollis, E. Kalmus *(Beit. z. klin. Chir.*, vol. 26, page 189) gives the following conclusions. The spasm may be tonic or clonic. The muscles are involved in coördinated groups rather than singly. In their order of frequency they are, the sternomastoid, the trapezius, the splenius and the digastric. The deeper muscles of the neck, the posterior recti, major and minor, and the superior and inferior obliques, are less often involved. The four chief causes of the trouble are a nervous disposition, overuse of the muscles in occupation, cold and trauma. The prognosis is rather unfavorable except in hysterical and very recent cases. Sometimes the disease after progressing to a certain degree remains stationary, and sometimes it progresses until death results from exhaustion. Medicine is of little value except in hysterical cases; electricity better deserves a trial. Galvanism should be used on the affected side, and faradism on the sound side. The anode should be placed on the affected muscle. Other methods of treatment are massage, orthopedic apparatus and operation. Operation should always be followed by gymnastic exercises and suitable apparatus. The various operative efforts suggested are stretching, or division and ligature, or resection of the spinal accessory nerve; or resection of the cervical sympathetic; or of both of these nerves; or division of the various muscles affected. Perhaps the best results have been obtained by resection of the nerves of the affected muscles, although in certain cases it is better to resect both muscles and nerves.

Diphtheria Antitoxin.—Statistics of a large number of cases of diphtheria treated with antitoxin show beyond doubt that the mortality of the disease is greatly decreased by the use of antitoxin. Some writers advise as the initial dose of antitoxin in young children 1000 immunizing units, to be repeated every twenty-four hours if the symptoms are aggravated or stationary. In severe cases these same writers give from 1500 to 3000 units, as initial dose, and repeat it in twelve hours if the symptoms do not yield. Others give children under two years an initial dose of 1000 i. u., and those over that age from 1500 to 2000 i. u., to be repeated in from eighteen to twenty-four hours, with a third dose if necessary. Baginsky gives children under two years an initial dose of 600 i. u., if the case is mild, and 1000 i. u., if the case is severe. To children over two years old he gives in mild cases an initial dose of 1000 i. u. and in severe cases as high as 3000 i. u. He gives a second dose of from 600 to 1000 i. u. within twenty-four hours in any of the cases if necessary. The English authorities recommend an initial dose of from 6000 to 20,000 i. u. and not infrequently an initial dose of 50,000 units is given. The size of the English doses arouses a suspicion that the standard strength of the serum is low or that its strength is estimated differently than in other countries. J. H. Musser *(University Med. Mag.*, March, 1900) has used much smaller doses than any of those and demonstrates his method and the size of the doses he uses in thirteen cases which he reports. His method has been to give children under eight years of age an initial dose of 500 immunizing units, to be repeated at intervals of six hours if the fever does not fall, if the strength of the patient does not improve, or if the local manifestations are spreading. To children over eight years of age he gives 1000 i. u. as an initial dose, and repeats it at intervals of eight to twelve hours if necessary. In all of the writer's cases except one there was a critical fall of the temperature within a few hours after the initial dose of serum. In four cases the temperature fell to normal, and in the others the fall was at least 2° F. There is usually a transient rise of temperature after an injection of serum, but it does not last long, is without meaning and is followed by a fall to normal. In all the cases the serum slowed and strengthened the rapid weak pulse which was present. The strengthening influence of the antitoxin on the heart is especially shown in the case of a little girl who had most remarkable evidences of stenosis of the mitral and aortic valves, and in whom compensation had never been fully

established. She passed through an attack of diphtheria with no signs of undue cardiac weakness. The membrane began to loosen in each case soon after the first injection of serum. Five of the cases the writer considered seriously ill, and their recovery due solely to the antitoxin. The initial dose in one case was 2000 and in three cases 1000 units, but in all the other cases it was below 800 units, in most of them 500 units. The subsequent doses varied from 200 to 1000 units. These small doses were followed by prompt and satisfactory results. Musser says this method implies recognition of the disease at the earliest moment possible and very close observation. He has not lost a case under this method, and the results obtained from the small doses seem to be as good as any reported.

Contagiousness of Erysipelas.—W. Respinger *(Beit. z. klin. Chir.,* vol. 26, p. 261) says that the actual extension of erysipelas from one patient to another can usually be traced. Epidemics of the disease disappeared with the dawn of antiseptic surgery. Idiopathic erysipelas is an obsolete term; and the idea of contagion through germs floating in the air is not supported by careful hospital experiments. These show that the streptococci of the disease are conveyed only in the purulent discharges. The scales of loose epidermis, or epidermis cut from an affected area, the sweat, and even the contents of blebs, as long as they were not purulent, were found to be free from streptococci. The conclusion is that infection proceeds from the discharge of erysipelatous wounds, and that these should be treated as other infected wounds, but that the patient should not be handled as though he were suffering from a contagious disease.

Anthrax.—Anthrax being a rare disease in this country, a case reported by Fred. D. Bird *(Intercolonial Med. Jour. of Australasia,* Feb. 20, 1900) is of interest. The patient, a man twenty-four years of age, a slaughter-man by trade, noticed that in one cow which he killed, the spleen was swollen and engorged with dark blood and that on cutting her throat there was much less bleeding than usual. The cow had slight epistaxis, but no blood-stained discharge from either rectum or vagina. The patient had seen these conditions in undoubted cases of anthrax. For four days the patient noticed nothing. On the fourth day he cleaned the trough into which the blood from this cow had drained. The man was positive that at this time he had absolutely no scratch, or cut, or lesion on his hands or forearms. Eight hours later he noticed a small red pimple, not painful, just above the right wrist in front. The next day this pimple had become a large painful bleb with a darkish center. At this time there was no swelling of the forearm and the man did not feel ill. In the evening the patient was very ill, temperature 101° F., pulse 100, face flushed, skin hot and dry, tongue moist and coated, and he had a persistent headache. There was no vomiting. The forearm and arm were tense with much swelling. The vesicle, at the point of inoculation, was about the size of a florin and was surrounded by much redness. The center of the vesicle was dark yellowish-gray, but it contained almost clear fluid. The joints of the arm were not affected. A severe lymphangitis extended along the inner and front aspects of the arm up to the axillary glands, which were very much enlarged and painful. The swollen axillary glands, and the lesion at the point of inoculation were entirely removed, and numerous deep incisions made in the arm and forearm. Pure carbolic was applied to the site of the initial lesion and the whole limb was invested in a large carbolic foment. The patient improved at once and at the end of a week was well. The rapidity of the onset of all the symptoms, and the marked absence of pain is especially to be noted. The diagnosis was confirmed by the microscope and cultures.

Operations on Glycosurics.—A. L. Fisk *(Annals of Surgery,* April, 1900) says the opinion is growing that, while glycosurics are not good surgical subjects, yet, with careful selection of cases and perfect asepsis, operative procedures are safe. Of course, in acute surgical diseases as appendicitis, strangulated hernia, etc., one must disregard the presence of sugar, although it adds greatly to the gravity of the prognosis. Sugar is very common in appreciable amounts as the result of toxic and traumatic lesions, and there is no reason to suppose that operations on such lesions are rendered more severe. The previously-diabetic are liable to various complications, therefore careful inquiry must be made into the past history, before allowing the prognosis to be biased by the mere presence of sugar in the urine. While, therefore, the presence of sugar in the urine is not an absolute contraindication to operation, it necessitates great care in the selection of cases, in the determination of the kind and extent of operation, and the strictest asepsis. Infection occurs from without and always as the result of error in technic. When infection does not occur wounds heal kindly but slowly, especially granulating wounds. The vascularity of tissues must be interfered with as little as possible. In gangrene of the extremities it is better not to use the Esmarch bandage in amputating, as it damages the vitality of the vessels.

Asthma in Neurasthenics.—In neurasthenics, nervous dyspeptics, suffering from habitual constipation, and feeling weak in spite of a good appetite and an appearance of being well nourished, the intensity and frequency of asthmatic attacks can be notably diminished and the general nervous condition improved by the administration of belladonna and nitrate of silver. For instance:

℞ Argenti nitrat.....gr. ii
Ext. belladonnæ.....gr. ii—v
Ext. gentianæ.....ʒ ss.

M. Ft. pil. No. XXX. Sig. One pill three times a day after meals.—*Golonbow.*

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SATURDAY, APRIL 14, 1900.

RHEUMATISM AS A DIAGNOSTIC SCAPEGOAT.

RHEUMATISM is a most convenient word. Like charity it covers a multitude of shortcomings, diagnostic as well as pathologic. It is easy to nod one's head, look wise and pronounce a painful affection rheumatism, and it is not difficult to outline a course of antirheumatic treatment. As the ordinarily prescribed antirheumatics are the coal-tar antipyretics and analgesics, which, in peripheral nerves, ameliorate painful conditions of the most varied kind, alleviation of pain almost invariably follows. A toothache may be greatly benefited by the same remedies, yet it will scarcely for that reason be considered rheumatic in origin. The therapeutic test for rheumatism, since we have no specific treatment for the condition is, of course, unreliable. Many of the painful conditions, both subacute and chronic, which are diagnosticated and treated as rheumatism are really manifestations of other pathologic conditions, and any rational therapy must be founded on more accurate diagnosis.

Some times the mistake of diagnosis has no serious consequences. The chronic condition underlying the painful affection is not rendered worse by the neglect to treat it directly. Not infrequently, however, delay is fraught with unfortunate results. When an incipient tuberculosis of the ankle or knee-joint is treated by rubbing and passive motion instead of by rest, when the referred pains of tuberculous hip-joint disease are misconstrued as rheumatic, harm always results. Fortunately, the subject has been so thoroughly impressed upon the practitioner by the appeals of the orthopedic surgeons that the condition of tuberculous joints is not often mistaken in our day.

The most fruitful sources of error now are undoubtedly flat- or weak-foot and the various occupation neuroses in the hand and arm. The tendency of weak-foot to cause a painful condition which is felt near the base of the big toe and around the heel, as well as in the ankle-joint, marks it out because of its diffuseness as almost surely rheumatic in origin. Usually the calf-muscles suffer in their function because of the spasm around the ankle and the loss of mechanical advantage by the alteration of the arch of the foot. This causes pain in the leg as high as the knee and confirms in the careless observer the diagnosis of rheumatism. Needless to say, no amount of antirheumatic treatment will relieve the symptoms.

Writers' cramp is but one of a series of spastic and painful conditions that may develop from improper use of arm-muscles. Pain in the muscles attached to the epicondyle has been noted from carrying an umbrella on a blustering day. The painful "skirt-wrist" from holding up heavy skirts is a familiar example in these days. Various neurotic conditions of the arm for which there is no localized anatomical basis have been classed frankly as brachyalgias. All of these conditions are liable to exacerbations in damp weather, somewhat as dental nerves that have once been affected are more sensitive while dampness prevails.

Most of these conditions require a tonic rather than the depressant antirheumatics. Most of them are benefited by local measures. Weak-foot requires the special orthopedic treatment suited to the condition. The pain due to the improper use of arm-muscles can only be overcome by the correction of bad habits in their employment. In a word, definite diagnosis of the exact parts affected by the painful condition is absolutely necessary, not only to discover the true character of the affection that is complained of, but also to assure the rational therapy of the condition.

NO EXPECTORATION, NO TUBERCULOSIS.

THE Municipal Council of Paris has recently passed an ordinance prohibiting expectoration upon the sidewalks and streets of that city and imposing appropriate fines and imprisonment. The *British Medical Journal* in commenting upon this and urging the London County Council to take similar action enforces its argument by the statement that "In many of the principal cities of the United States spitting upon the sidewalks or pavements is forbidden and the prohibition is rigidly enforced."

This to us is a most pleasing bit of intelligence or rather it would be, were we permitted to lay this flattering unction to our souls. But candor compels us to admit that our English cousin has, we fear, taken the will for the deed and rather overstated the actual situation. 'Tis true that such laws are upon our statute books but, alas, in shame be it confessed, their observance consists more in the breach than in the doing. We have not been wanting in convincing orators who have depicted the dangers of the dissemination of tuberculosis by means of the sputum in such glowing colors as to crystallize conviction into statutes and ordinances, but the hygienic sense of the people has not yet become sufficiently enlightened to uphold their enforcement. Indeed the scenes that are constantly witnessed upon the streets of New York are enough to bow the head of every intelligent citizen in shame and humiliation. Upon a breezy morning recently a policeman sought protection from the chilling blasts in one of the receding angles of the Dewey Arch and, as if to hedge himself about from all intrusion, with his back to the corner, he erected upon the pavement a geometrically constructed barricade of expectoration, reaching in a circle from one protruding angle of the base of the Arch to the other. The process was sufficiently disgusting in itself, but when to the sight of it was added the reflection that the perpetrator was an officer charged with the enforcement of the very law he was so complacently violating, the hopelessness of the situation became oppressive. But the sequel was if possible still more disgusting. Toward evening of the same day, after the sputum had been dried to a powder in the sun and air, a woman, in the guise of a fashionably dressed lady, with her arm twisted around in the present characteristic fashion so that she might raise her skirts from the ground, was standing, waiting for a trolley car, directly over the spot beautified in the morning by the geometrically arranged sputum. The car passes a little beyond its expected stopping-place, and the lady in her eagerness to get on board lets go her grip upon her skirts and makes a run for the car. A more perfect sweeping the pavement could not have had. The dust rolls up in masses beneath those skirts and finally bursts out at the sides in such clouds that the passer-by, who had observed the performance of the morning, held his breath in self-protection and waited for the dust to subside. The woman carried the most of it away, however, in the meshes of her dress and skirts, to be shaken out and disseminated about the rooms of her home. There is undoubtedly no more fruitful source of tuberculosis infection than in the process above described—a procedure transpiring daily, yes, hourly, upon the streets of thousands of cities all over the civilized (?) world. And yet we wonder that tuberculosis is so prevalent, that it seeks its victim in such unexpected places and causes one-seventh of all the deaths that claim mankind.

THE PATHOLOGICAL INSTITUTE.

THE New York State Legislature has adjourned. During the final days of the session legislation was enacted with such startling rapidity that it requires no little time to take observations and see where we are. In the appropriation bill we find that the Pathological Institute has escaped the destroyers's hand, but it has escaped as if by fire. For we read: "For the Pathological Institute, twenty thousand dollars, or so much thereof as may be necessary, no part of which shall be paid for rent." As the Institute has no home, save such as it acquires by "rent," the question arises: what is it going to do with itself? The State Commissioners in Lunacy have prepared this bill. Is it their intent to kick the Institute into the street? Or do they think that pathological institutes can live on a name regardless of a habitation? We await some word from that silent but mysterious body.

ECHOES AND NEWS.

NEW YORK.

Governor Roosevelt's Nominations.—The Senate confirmed on April 5th the following nominations made by the Governor: Dr. George Elmer Gorham of Albany, Hulbert E. Brown of Mt. Morris, Anson P. Thompson of Ellisburg and Mary E. Joy of Syracuse as managers of the

Craig Colony for Epileptics; Amory B. Houghton of Corning as manager of the Willard State Hospital; Charles F. Howard, M. D., of Buffalo as a member of the State Reformatory at Elmira.

Appointments at Roosevelt Hospital.—The trustees of Roosevelt Hospital at their recent meeting divided the surgical service of that institution and appointed Dr. R. F. Weir and Dr. W. T. Bull Visiting Surgeons. Both of these men are at the present time Visiting Surgeons to the New York Hospital and Professors of Surgery at Columbia University. The appointments will take effect April 16th.

Association of Military Surgeons.—The Association of Military Surgeons of the United States will meet at the New York Academy of Medicine May 31st, June 1st and 2d, 1900. The members of this organization are drawn from the national services of the Army, Navy, and Marine Hospital, and from the National Guard and militia of the several States.

Leper at Large.—Charles Serrattero, a Sicilian, feeling unwell, called at Bellevue Hospital for treatment on April 7th. After a careful examination the diagnosis of leprosy was made. He could not be received in Bellevue, so he returned to his home at 123 Elizabeth Street.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons, Columbia University, for 1900, will be delivered at the New York Academy of Medicine on April 18th, 24th, and 26th, at 8.30 P. M., by Professor John G. Curtis, M.D., of Columbia University. Subject: "The Discovery of the Nerves and of Their Function."

Contagious Diseases.—For the week ending April 7, 1900: Measles, 715 cases and 31 deaths; diphtheria, 240 cases and 32 deaths; laryngeal diphtheria (croup), 22 cases and 15 deaths; scarlet fever, 164 cases and 14 deaths; chickenpox, 23 cases; tuberculosis, 327 cases and 207 deaths; typhoid fever, 11 cases and 7 deaths; cerebro-spinal meningitis, 14 deaths; total, 1502 cases and 320 deaths.

Medical Legislation.—The bill providing for the establishment of a hospital in the Adirondacks for incipient tuberculosis has passed both houses of the Legislature, but the amount of the appropriation was reduced from $200,000 to $50,000. The New York State Medical Association was granted a charter. The bill appropriating $70,000 for the construction of a building at the quarantine station in New York Harbor for the detention of passengers was concurred in by both houses.

A Case of Burial Alive.—A report comes from Rochester, N. Y., that a well-known resident of Sandy Creek, a neighboring village, died January 4th after several weeks' illness from scarlet fever and was buried in the local cemetery. On March 31st the father of this young man died, and in order to make room in the family plot, it became necessary to move the body of the son. Upon disinterring the casket, the glass front of the coffin was front to be shattered in pieces, the bottom was kicked out, and the sides were sprung. Upon removing the lid, it was found that the body was resting on its face, the arms were bent at the sides, and in the tightly clinched fists were handfuls of hair, showing that a terrible struggle had taken place.

Tenement-House Bill Signed. — Governor Roosevelt signed on April 4th the bill authorizing him to appoint a commission to investigate the tenement-house problem of New York and Buffalo, and providing that the commission shall report to the next Legislature a new code of tenement-house laws. An appropriation of $10,000 is made for the expenses of the commission.

Old New York Doctors.—Dr. Sidney H. Carney, Jr., the new Recording Secretary of the New York Historical Society, has entertained its members with an interesting paper on physicians in New York one hundred years ago. The city contained several prominent physicians at that time, but judged by modern standards, medicine was in a very crude state. In 1800 there were only five medical schools in the United States. The first was at Kings (now Columbia) College, established in 1767; the second at Philadelphia, in 1768; the third at Cambridge, Mass., 1781; the fourth at Dartmouth College, N. H., in 1798, while a fifth was instituted the following year in Lexington, Ky. The first students to receive medical degrees in America were Samuel Kissam and Robert Tucker. They were conferred by Kings College. Among the professors in 1800 were Drs. Richard Bailey, John R. B. Rodgers, Wright Post, William Hammersley, Samuel L. Mitchell, and David Hossack. There were thirty-four students that year, an increase of thirteen from 1799. Dr. Bailey died in 1801 from yellow fever, contracted while discharging his official duties as Health Officer of the Port. Dr. Wright Post was considered the most noted surgeon in the city in 1800, with the possible exception of Dr. Richard Kissam. Dr. Hossack was graduated from Princeton, received his medical degree in Philadelphia in 1791, and then studied abroad. Upon his return to New York he brought with him the first cabinet of minerals ever seen in America, as well as a collection of plants. He held several professorships in Columbia, and established and maintained for several years the well-known Elgin Botanic Garden, situated between what are now Forty-seventh and Fifty-first Streets, and running from Fifth Avenue to within one hundred feet of Sixth Avenue. Some twenty acres were under cultivation, and it is related that he always closed his spring course of lectures with a strawberry festival in order that the students might see "that we are practical as well as theoretical." He was one of the founders of the New York Historical Society in 1804, and his house was the resort of the learned of all parts of the world.

Errata.—In Dr. Abbe's article which appeared in our last week's issue the percentage of cases of pure carcinoma of the breast that had reached the three-year limit without recurrence, after operation, was stated at 25 per cent. This should have read 50 per cent.

PHILADELPHIA.

Reception to Dr. Martin.—Dr. John C. Da Costa, President of the Obstetrical Society, tendered a reception to Dr. F. H. Martin of Chicago, April 5th. The reception followed the meeting of the Society at which Dr. Martin gave his address and was attended by the prominent obstetricians of the city.

Health Report.—The deaths in the city for the week ending April 7th were 732, an increase of 53 over the previous week and of 143 over the corresponding week of last year. Contagious diseases: Diphtheria, 86 cases, 22 deaths; scarlet fever, 73 cases, 6 deaths; typhoid fever, 89 cases, 11 deaths. Influenza was reported as being the cause of 42 deaths.

Smallpox Report.—The March report of the State Board of Health gives the statistics of smallpox for the month as 33 cases and 3 deaths. These cases were in eleven districts and widely scattered throughout the State. Philadelphia had three cases.

University Surgical Teaching.—The University of Pennsylvania is to have a professor of surgery and two professors of clinical surgery, which practically creates a new chair in the Faculty. It is rumored that Dr. J. William White, Clinical Professor, is to be made professor of surgery in the place of Dr. John Ashhurst, Jr., who lately resigned.

Jefferson Faculty Changes.—Two additions have been made to the major Faculty of the college. Dr. F. X. Dercum, formerly Clinical Professor of Diseases of the Nervous System has been elected Professor of Neurology, and Dr. J. Chalmers Da Costa, Clinical Professor of Surgery, was elected Professor of the Principles of Surgery and of Clinical Surgery.

Nurses' Home.—The Pennsylvania Hospital has secured ground on which will be erected an elaborate home for the nurses of the institution, fifty of whom are now occupying temporary quarters. The hospital is constantly expanding, 28,000 patients being cared for during the past year.

Obstetrical Society.—At the meeting of April 5th the Society was addressed by Dr. F. H. Martin, of Chicago, his topic being "Removal of the Bladder with or without Hysterectomy in Order to Extend the Possibilities of Surgery for Malignant Disease of the Pelvis." The operation is a formidable one but is justifiable when the condition in the pelvis is more formidable. The points considered by the speaker were, first, would the removal of the bladder make a more extensive operation possible; second, the immediate difficulties to be overcome in such removal and its remote effects; third, the operative technic. In cancer of the uterus involving the bladder the removal of the uterus is only a makeshift. By the operation suggested the bladder, the urethra, and an inch of the ureters, can be removed in addition to the uterus. The immediate difficulty is the disposal of the ureters. The rectum or sigmoid flexure is considered the best place to divert them, as it offers reservoir room, emptying power, and voluntary control of the reservoir. The objection to this has been the danger of ascending urethritis. Experimental work upon more than 60 dogs has demonstrated that the requirements of the occasion will bring about an increased resistance on the part of the ureters such as is seen in cases of exstrophy of the bladder. Experimental work on animals is unsatisfactory, however, owing to the changed conditions of gravity, inability to keep the rectum clean, and to retain catheters in the ureters for several days after the operation. In the transplantation of the ureters into the bowel the ends of the ureters are approximated for a distance of from 2 to 3 cm. and buried for an inch or more in the muscular coats of the bowel. The fecal mass as it passes this place squeezes out the contents of the ureters in the direction of the fecal current, and after it passes the urine spurts forth and thus upward infection is rendered less liable. The fear of absorption of the urine from the bowel is not well founded and it is believed that the sphincter will retain the urine. The extirpation of the bladder and uterus is advised in cases where cancer has involved either organ and extended to the other. All diseased tissue that can be removed should be taken away even if this does not include it all. Preparation should be made for a desperate operation, transfusion used, and the best assistants secured. The conclusions are: (1) The operation is justifiable under certain desperate circumstances. (2) The ureters should be transplanted into the rectum. (3) The amount of pelvic tissue removed is materially increased. (4) The operation should not be undertaken by one who does not thoroughly understand the technic and who has not done considerable experimental work upon animals. In the discussion of this paper Dr. E. E. Montgomery considered the method of ureteral transplantation as a great advance in surgery, but thought the mortality too great to justify extirpation of the bladder. Where malignant disease of the uterus has spread to the bladder the parametral tissues are so involved that even this operation would probably not be successful. If the patient's life should be prolonged for only a short time with the probability of recurrence of the disease, an operation of such gravity would not be indicated. Dr. John Clark stated that the paramount point is the removal of the local involvement. If the disease has spread to the lymph glands it is incurable. When it has gone so far that removal of the bladder is indicated, the anemia and ca-

chexia of the patient would contraindicate such an extensive operation.

CHICAGO.

Rush Faculty Changes.—The office of vice-president is established, and Dr. Henry M. Lyman, Dean of the Faculty, in view of his long connection with the college and the valuable services rendered is appointed to this office. Dr. Frank Billings, Dean of the Senior class is promoted to the deanship of the Faculty. Dr. John M. Dodson and Dr. Frederic S. Collidge are reappointed Deans in charge of the Freshman class. The resignation of Dr. Norman Bridge as Professor of Medicine is accepted and he is appointed Emeritus Professor of Medicine. Dr. John M. Dodson has been appointed to the Professorship of Pediatrics; Dr. D. R. Brower to the Professorship of Mental and Nervous Diseases.

Chicago Medical Society.—At a meeting, held April 4th, Dr. Geo. E. Shambaugh presented a case of unilateral chronic suppuration of the frontal, maxillary and sphenoid sinuses with no complications. The patient, twenty-two years of age, dated her trouble back ten years, when, after an attack of typhoid fever, she began to have a purulent discharge from the right side of the nose which has continued ever since. During this time she has suffered a great deal from headache and from dry pharyngitis and has been unusually subject to attacks of acute rhinitis. When first examined a mass of polyps completely filled the right side of the nose. These polyps and a degenerated middle turbinated body were removed, when creamy pus was seen oozing from the middle meatus of the nose, showing that some of the accessory sinuses were affected. Two weeks later the patient was again examined, when, after thoroughly cleaning the right side of the nose, pus was seen to appear at three separate points. These points proved to be the normal openings into the sphenoid, the frontal and maxillary sinuses. A soft silver cannula, curved at the proper angle, was introduced into the maxillary and frontal sinuses through their normal openings and pus was washed out from each. The case was one of simple chronic suppuration in these three accessory sinuses, with no complications and no involvement of the overlying structures which would point to disease of the sinus, and the diagnosis was made by direct intranasal methods. A skiagraph of the case was exhibited, showing the position of a probe passed through the frontonasal duct into the frontal sinus.

Double Cryptorchism Complicated by Scarlet Fever.—Dr. Edward H. Ochsner reported a case and exhibited a patient who was operated upon for double cryptorchism and who, twenty-four hours later, developed scarlet fever. The patient, a boy, thirteen years of age, whose family history and previous history were good, was operated upon for double cryptorchism on January 26, 1900. On the day before the operation the patient was perfectly well except for a very slight cough, which was attributed to a slight cold. The heart and lungs were normal.

The ordinary operation was performed. Patient vomited only once or twice from the anesthetic, but coughed a great deal during the following night and did not sleep well. Apart from this he did well until eighteen hours after the operation, when his temperature quite suddenly rose to 101° F. and the pulse to 102. Thirty hours after the operation the temperature was 104 and the pulse 120. Patient had a peculiar strawberry-tongue and a very congested throat. The following morning, forty-eight hours after the operation, patient was covered with a scarlet rash. Thirty-six hours after the operation Dr. W. J. Class made a culture from the patient's blood and obtained an uncontaminated growth of the Class diplococcus scarlatinæ. Nine days after the operation the patient's temperature and pulse were practically normal, but typical scales began to develop and continued to exfoliate for several weeks. From these also the diplococci were cultivated. The patient made an uneventful recovery. The case is reported in order to emphasize the importance of a bacteriologic examination in all cases of so-called septic rashes, many of which are undoubtedly exanthemata.

The Bone-Coupler in Intestinal Resection.—Dr. Jacob Frank reported a case of double pyosalpinx with tubo-ovarian abscess complicated with such firm peritoneal and intestinal adhesions that resection of the bowel was necessary. The intestines were found to be very friable and infiltrated, so that it was decided to do an intestinal resection. The anastomosis was effected by means of the Frank decalcified bone-coupler, 1⅛ inches in size, was used, having determined the measurement by means of the Frank enterometer. The operation was completed by draining with a Mikulicz and a glass drain. The piece of rubber tubing was passed on the fifth day following the anastomosis. The patient left the hospital five weeks after the operation.

GENERAL.

Canadian Medical Association.—The next meeting of this society will be held at Ottawa on September 12, 13, and 14, 1900. This will be the centennial meeting of the Association and an effort is being made to properly celebrate the occasion. It is expected that Dr. Edmund Owen, of London, England, will deliver the address in surgery.

The Plague at Honolulu.—It is estimated that the cost of suppressing the plague at Honolulu will amount to $2,000,000. Heavy expense has been incurred in building detention camps and supplying provisions for the people detained. It was necessary also to provide accommodations for those who lost their homes by the fires. March 31st was the sixth day since the appearance of the last case of plague and the Board of Health expressed confidence that they had reached

the end of their contest. Since December 12th there had been seventy cases of plague, of which sixty died.

The Army Hospital Ships.—It appears that neither of the two army hospital ships is available for bringing home sick soldiers from the Philippines, and the War Department is arranging to have such service temporarily performed by the transports plying regularly between Manila and San Francisco. The "Missouri" has been practically condemned and it is possible that she may not be retained in the military service. The "Relief" is now in the Philippines. Owing to her limited coal capacity, it is not deemed expedient to send her across the Pacific with a load of invalids.

Hydrogen Solidified.—Professor Demar solidified hydrogen before the Royal Institution in London on April 7th. He surrounded a tube containing liquid hydrogen with liquid air, to prevent the ingress of heat, and then by means of a powerful air pump transformed the liquid hydrogen into a white, opaque solid.

Trained Nurses Wanted in Cuba.—Application for trained nurses of both sexes to go to Cuba has been made by St. J. Greble, Assistant Adjutant-General and Superintendent of Hospitals and Charities at Havana. The applicant desires to place in each of the hospitals and orphan asylums in Cuba which contains more than one hundred inmates, a trained nurse "who will be able to straighten out the present deplorable condition of most of these institutions."

Dissection in New Jersey.—Dr. C. F. Adams, of Trenton, N. J., writes that the statement made in the issue of the MEDICAL NEWS, March 24th, that dissection is prohibited in New Jersey is not strictly correct. Dr. Adams was instrumental in having a law passed by the Legislature five years ago regulating the dissection of dead bodies. By its provision the bodies of persons dying in public institutions may be utilized as dissection material by certain societies definitely organized for such purposes. Upon the passage of the law a society was immediately organized and incorporated, rooms were secured, and considerable work accomplished. The society is still in existence and is able to secure an abundance of material without difficulty.

Insanity in the Army.—Secretary Root has had prepared a statement which fully disproves the many charges that have been made as to a large percentage of insane and suicide cases in the army. It shows a smaller rate of insanity among the troops in the Philippines than in the regular army for ten years. From July, 1898, to March 20, 1900, thirty-five cases of insanity have been reported in the Philippines. During this period the mean strength of the force under General Otis was 32,000 men. Based on this strength the rate of insanity for twelve months was 31.3 cases. The mean strength of the regular army for the ten years ending July, 1898, was 29,000 men with a rate of insanity of 33.1. Seven officers and 22 enlisted men committed suicide in the Philippines between April 11, 1899, and March 27, 1900.

Water Filtration.—The *Scientific American* in commenting upon the results of the recent instalment of the filtration beds in connection with the water supply of Albany, N. Y., says: "The disease directly traceable to the sewer polluted water of the Hudson was typhoid fever, the death-rate from which the city of Albany for nine years ending 1898 had averaged 85 per annum. During the first four months in which the filters have been in operation, 7 deaths from this cause have been reported. During the corresponding interval of the nine years ending 1898, the average number of deaths was 24; so that the filtration of the water has reduced the deaths from this cause in the ratio of 24 to 7. The filtration plant at Lawrence has reduced the typhoid fever death-rate in that city from 11.31 to 2.54. The filtration plant in the city of Hamburg, Germany, was put in operation in 1895; during the five years previous to that date the average typhoid death-rate was 4.72, since that date it has fallen to .72. Since the opening of the filtration plant of the city of Mount Vernon, N. Y., in 1894, the number of deaths from typhoid has decreased over 76 per cent. The average cost of operating the filters at Mount Vernon, including the laboratory work, is $1.67 per 1,000,000 gallons."

The American Gastro-Enterological Association.—The third annual meeting will be held in the banquet hall at The Shoreham, Washington, D. C., Tuesday, May 1, 1900. The following is the provisional program:

1. The Occurrence of Mould in the Stomach and Its Probable Significance. Max Einhorn.
2. Sugar, as Such, in the Dietary of Dyspeptics. Wm. Gerry Morgan.
3. Concerning the Nature of the Biologic Cell Processes in Malignant Neoplasms, and Their Significance for the Early Diagnosis of Cancer of the Stomach. J. C. Hemmeter.
4. The Appendix and Cecum from the Standpoint of the Gastro-Enterologist. A. L. Benedict.
5. Feeding the Sick. A. P. Buchman.
6. Starvation versus Feeding in Diseases of the Stomach—Illustrated. Frank H. Murdoch.
7. A Case of Cancer of the Esophagus; perforation into the left Pleura; death from Pyopneumothorax. Exhibition of Specimen. Julius Friedenwald.
8. Some Clinical Observations on the Position and Topography of the Stomach. G. W. McCaskey.
9. Remarks on Stenosis of the Pylorus. Henry W. Bettman.
10. Report of an Interesting Case. E. G. Cutler.
11. Mechanics of Digestion. F. B. Turck.
12. Epigæa. Charles D. Aaron.

Medical War News.—What appears to be the first serious reflection upon the sanitary man-

agement in the South African war is the recent outbreak of typhoid fever among the Boer prisoners on shipboard off Simonstown. Over one hundred prisoners are prostrated with the disease, many deaths have already occurred, and fresh cases are developing daily. Nowhere is the water supply so absolutely under control and easy of inspection as upon shipboard, and in view of the well-known fact that some of the South African towns are not above suspicion in regard to typhoid and a polluted water supply, every precaution should certainly have been taken to guarantee the purity of drinking-water taken on board the prison ships. On the other hand, it may be quite possible that the prisoners were already infected before being brought to Simonstown. Enteric fever has certainly been rife in most of the Boer laagers, due to the carelessness in infecting their sources of water supply. The matter should be strictly investigated, for an outbreak of a preventable disease like typhoid among the prisoners of war of a great and enlightened nation is, to say the least, unfortunate, especially when contrasted with the absence of any serious disease among the prisoners at Pretoria.

The hospital ship "Maine" has been ordered home to England, with a consignment of invalids on board. This is occasioning some surprise, and it seems a pity in view of the rapid progress made by the wounded and fever cases in the sea breezes at Durban that she should not be allowed to remain as a floating hospital. Transports are returning almost empty each week and could comfortably carry back cases of delayed convalescence and hopelessly chronic affections. The immediate reception and care of cases in the acute stage seems to be a more appropriate service for hospital ships, instead of being employed as "mere beasts of burden" for the long voyage home. It is quite possible, however, that the "Maine" has on board a sufficient number of patients who could not safely be transferred to the transports, or trusted to their crude hospital accommodations to bring them home in comfort.

Dr. Jameson, the leader of the famous raid into the Transvaal territory, has recently arrived at Cape Town seriously ill. The presence of pneumonia in increasing severity and prevalence among the rank and file of the British army is becoming serious. The approaching winter season and great elevation of the country are productive of cold nights, against which proper provision has not been made.

American Climatological Association.—The seventeenth annual meeting of the Association will be held in the banquet room of the Arlington Hotel, Washington, D. C., May 1, 2, and 3, 1900. The program is as follows: President's Address, Abraham Jacobi, New York.

The Modern Physician's Duty to His Tuberculous Patients. Frederick I. Knight, Boston.

The Construction and Management of Small Cottage Sanatoria for Consumptives. Arnold C. Klebs, Chicago.

A Report of Certain Cases of Tuberculosis Which were apparently due to the Nature of the Soil. Richard Cole Newton, Montclair, N. J.

The Educational and Legislative Control of Tuberculosis. Charles Denison, Denver.

Some Phases of the Tuberculosis Problem in Colorado. Sherman G. Bonney, Denver.

Some Personal Observations on the Effect of Intrapleural Injection of Nitrogen Gas in Tuberculosis. H. P. Loomis, New York.

Bacterio-Therapeutics, with Especial Reference to Tuberculosis. E. R. Baldwin, Saranac, N. Y.

(To be read at the general meeting of the Congress, on Tuesday afternoon, May 1st.)

Subsequent History of Patient Apparently Cured by Antitubercle Serum. J. Edward Stubbert, Liberty, N. Y.

Stomach Conditions in Early Tuberculosis. Boardman Reed, Philadelphia.

The Phlebitis of Advance Phthisis, with Report of Cases of Phthisis following Abscesses of the Hand. R. G. Curtin, Philadelphia.

Report of a Case of Spleno-myelogenic Leucemia with Tuberculosis, with Remarks on Blood Examination in Tuberculosis. H. L. Elsner, Syracuse.

The Hydriatic Treatment of Tuberculosis. J. H. Kellogg, Battle Creek, Mich.

Petroleum Oil in the Treatment of Phthisis. W. D. Robinson, Philadelphia.

The Inadequacy of the Physical Signs as Indicating the Gravity of Pneumonia. Andrew H. Smith, New York.

The Blood Changes in High Altitudes. S. E. Solly, Colorado Springs.

The Bath in Gout. Charles C. Ransom, New York.

A Case of Mural Endocarditis. Harold Williams, Boston.

Exercises Suitable for Children Suffering from Heart Disease. J. Madison Taylor, Philadelphia.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, March 31, 1900.

FIRST ANNUAL MEETING OF THE POLYCLINIC—DEFEAT OF COUNTY COUNCIL WATER BILLS—A "JUBILEE" MEDICAL DIPLOMATIST—FAREWELL ADDRESS OF SIR WILLIAM GAIRDNER—CANDIDACY OF PROFESSOR OSLER—AWARD OF ARBITRATOR IN THE "PHOSSY JAW" HEARING.

THE first annual meeting of the London Medical Graduates' College and Polyclinic has just been held and a most encouraging report of progress presented. Sir William Broadbent, the President, announced that 607 members had been enrolled, a commodious and centrally-situated building purchased and equipped, and five course of lectures, classes, and clinics, held dur-

ing 1899. The attendance at the public consultations had been excellent, reaching as high as nearly 400 per week, and an abundant supply of interesting and, in many instances, rare and unusual cases had been secured. Practitioners of medicine were coming to appreciate and avail themselves extensively of these opportunities for securing expert opinions in the cases of patients who were too poor to afford a consultant's fee.

As the sessions of the College were only opened in May last, the financial statement is naturally large one of expenditure, but a gratifying number of donations have already been received, both from the profession and the public, a small but increasing income already secured, and the future prospects of the infant institution are most favorable, considering the extreme youth and slowness with which the conservative British mind "catches on" to a new departure. It has had to run the gauntlet of strenuous opposition from all the great teaching hospitals and their schools, and from the great body of consultants in London, but this is now dying down as the aims of and necessity for the College are becoming better understood, and the fact that it has not only survived, but steadily prospered in the face of it, is a proof of its vigor and vitality which renders its future practically assured.

After a prolonged debate Parliament has again refused to do anything for the relief of London in the matter of its water supply. Both the bills put forward by the London County Council, the first for purchase by the Council of the existing plant, and the second for securing a supply from Wales, were defeated. This leaves the metropolis at the mercy of the present companies and the vagaries of the tiny Thames and rivulet-like Lea, with the vague recommendation by the late Royal Commission of purchase upon exorbitant terms, by some nebulous body which is yet to be created but which is *not* to be the County Council, as the only prospect for future relief. This is the third time a similar bill has been presented by the Council and defeated, but, as the majority against it this time was much smaller than was expected, three or four more years may possibly see it passed by Parliament. The control of the two great English-speaking world-capitals, New York and London, by outside legislative bodies, although it has its advantages, is a terrible drawback in the main.

The phenomenal security and length of tenure of all positions connected with the English diplomatic service was illustrated in a member of our own profession this week by the death of Dr. Edward D. Dickson who for *forty-four years* had held the post of Physician to the British Embassy at Constantinople; and he had been physician to other Consulates for *nineteen years* before that. Dr. Dickson was an energetic and trusted servant of the Government, which had availed itself of his services as commissioner and delegate to a number of boards and conferences, political, as well as medical and sanitary, notably the Conference upon Asiatic Cholera, in 1866, and the Ottoman Quarantine Tariff Commission in 1867. But think of retaining official connections with the diplomatic service since the accession of Queen Victoria, sixty-three years, and in a foreign land at that!

By a strange coincidence, the same session in which the Chair of Medicine in Edinburgh became vacant by the death of Sir T. Grainger Stewart sees the same chair in the sister university of Glasgow vacated by the voluntary resignation of Sir William Gairdner. This was formally intimated to his class in an almost pathetic little farewell address in which he stated that, although his enjoyment of the stimulating work of teaching was as keen as ever, the difficulty of keeping in touch with the enormous output of literature representing the rapid advances in all departures of recent medicine, especially in that of bacteriology, was fast becoming an impossibility because of his failing eye-sight, and he therefore felt that he ought to resign in favor of "at least a younger pair of eyes and, perhaps, a younger brain."

Sir William Gairdner's intention to resign was privately intimated some weeks ago, but it will be surprising if the Court of the University accept his resignation. The very fact of his being capable of withdrawing upon such noble and self-sacrificing grounds stamps him as simply invaluable to any teaching body. A veteran teacher of his long-proved ability and immense experience who, with the modesty of true greatness, is conscious of the limitations of age, is worth a dozen laboratory-made, up-to-date young prodigies, full of the boundless confidence of youth.

The telegram of Professor Osler to the *British Medical Journal*, stating that he is not a candidate for the Chair of Medicine at Edinburgh, will be received with general regret by the profession here. His work is as widely known and as highly admired here as at home, and he would have been most cordially welcomed as a permanent addition to the ranks of British medicine.

The award of the arbitrator, appointed by the Home Office to hear the objections of the manufacturers to the rules passed by the last Parliament for the prevention of phosphorus-poisoning in the match industry, has resulted in a substantial sustaining of the regulations as they stand. These provide for the regular and frequent inspection of the jaws and teeth of the workers by both a dentist and surgeon, as the evidence of all witnesses was overwhelming that practically the sole risk of "phossy jaw" lay in decaying teeth and ulcerated gums. Careful provision is to be made for fan-ventilation of the rooms used for the dangerous processes, mixing the paste, dipping and drying, and these are to be separate from the rest of the factory and, so far as possible, open to the sky. Employers are to provide overalls for all workers in the dangerous branches and these are to be washed every week and removed before eating, while a fixed minimum of lavatory, dining-room, and cloak-room accommodation is to be provided. That preven-

tion is practicable and possible was abundantly proved by the experience of one factory, that of Bell & Company, where, by taking most of these precautions, only one case of "phossy jaw" had occurred in thirty-three years, and we may look forward with hopefulness to seeing this blot upon our industrial system effaced in the near future.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

A CASE OF DIVIDED STERNUM—HEMORRHAGIC EROSIONS OF THE STOMACH—SIX SUPERNUMERARY BREASTS—NEW METHOD OF DEMONSTRATING THE ACCESSORY NASAL CAVITIES—EFFECT OF GELATIN INJECTIONS ON AN ANEURISM OF THE AORTA.

At the British Medical Society, February 21st, R. Virchow presented a man aged forty years whose sternum was completely divided through the long axis by a fissure. The pulsations of the heart transmitted through the overlying skin were plainly visible. This severe congenital anomaly gave the patient no disturbing symptoms.

C. Pariser spoke of hemorrhagic erosions of the stomach, which usually occur in large numbers and are not confined to any one part of the stomach. They may lead to death by hemorrhage. Thus far the diagnosis has been made only at autopsy. The symptoms are these: The patients complain of very severe pain about half an hour after taking any food. The pain is described as a burning-hot one, but not confined to any part of the stomach; nor is it cramp-like. It lasts about two hours. It ceases at once if the stomach is irrigated. Irrigation, when the stomach is empty, will bring out a water faintly tinged with blood, and containing a few shreds of mucous membrane. Sometimes the amount of hydrochloric acid is reduced; sometimes it is above normal. The pain is caused by the contact of gastric acids and those in the food with the ulcerated areas in the stomach. Through fear of pain patients get into the habit of eating very little and so grow thin. The affection is not an independent one but is a complication of chronic gastric catarrh. The erosions heal without leaving a scar. They rarely deepen into a chronic ulcer. The best treatment is irrigation of the stomach with a solution of silver nitrate, 1-2000, 1-1500, or 1-1000. Two pints should be introduced, one after the other, and when the second has been drawn off the stomach should be washed with salt solution. Dietetic treatment is invaluable. The food should be absolutely bland. If these measures do not suffice the patient should be put upon the same treatment as is followed in gastric ulcer.

Benas showed a patient February 28th who had three pairs of supernumerary breasts, situated above and externally to the normal breasts and in three stages of development. The lowest two were simply pigmented areas, the next possessed rudimentary nipples, and the third and largest pair presented breast glands and nipples from which milk flowed in abundance. The glandular tissue was situated well up in the axilla. When lactation ceased the extra breasts grew smaller and stopped secreting milk. This is an example of atavism. Similar epithelial inclosures have been found in the embryo. Sometimes heredity seems to play a part.

March 7th, G. Bruhl exhibited a number of skulls which he had prepared by a new method in order to show the size and position of the cavities which communicate with the nose. The bones were made transparent by decalcification and soaking in xylol, and the para-nasal cavities were filled with "Wood's metal." The mean capacity of the frontal sinus was found to be 2.8 ccm., that of the antrum in the superior maxilla, 10.5 ccm., and that of the sphenoidal sinus, 1.9 ccm. The total volume of all the accessory cavities is about 45 ccm., which is a sufficient explanation of their importance in diseases of the nasal apparatus. This method of demonstration of these cavities is far superior to any at present in use.

At the Union for Internal Medicine at Berlin, February 26th, A. Fraenkel showed a specimen from a patient who had received during a long time gelatin injections in order to cure an aneurism of the arch of the aorta. The patient was a man aged fifty-three years, who became infected with syphilis at about his twentieth year and thereafter suffered from many secondary and tertiary lesions, in spite of a great deal of antisyphilitic treatment. In July, 1899, he suffered so from an aneurism of the aortic arch that he entered a hospital. He was put to bed and was given an injection of 50 ccm. (oz. 1-jss) of a one-per-cent. solution of gelatin twice a week. In six weeks he had improved so much that he refused to remain longer. After two weeks of running about his symptoms came on in full measure and he returned to the hospital. He was again put to bed, and was given injections twice weekly of a two-per-cent. solution of gelatin. Again dyspnea disappeared, the size of the tumor seemed to grow less, and after twenty-six injections the patient was allowed to get up and go about. The improvement was short-lived and the patient soon began to have attacks of suffocation, in one of which he died. The aneurism was found to occupy the whole arch of the aorta. Over the whole of its inner surface there was a deposit of fibrin 1.5 cm. (0.6 in.) thick. Fraenkel hesitated to affirm that the gelatin injections had caused the desposit of fibrin.

Litten said that the only therapeutic resource which seemed to him to benefit a patient with aortic aneurism is rest in bed. All the methods which have been brought forward to facilitate coagulation in the sac, injection of chemicals into the sac, or of fibrin ferments or ergotin, electrolysis or electropuncture, and, finally, the introduction of foreign bodies into the sac, have failed in his hand to make good the statements of their

advocates. He had tried gelatin in four cases. None of the patients had died, but none was improved by the treatment. He did not believe that the layer of fibrin in Fraenkel's case was due to gelatin injections, as it is often found in aneurismal sacs of patients who have not received injections of gelatin.

SOCIETY PROCEEDINGS.

THE NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, Held Monday, March 19, 1900.

(Continued from p. 560.)

Diphtheria Antitoxin.—Dr. W. H. Park of the New York City Department of Health said that the final test of the value of diphtheria antitoxin must be the chemical results of its use. There are many factors that must be taken into account before a definite conclusion can be reached in the matter. In laboratory experiments diphtheria antitoxin undoubtedly does good. To many minds there remains a doubt as to whether the diphtheria bacillus is really the cause of diphtheria or not. In two involuntary laboratory experiments made on human beings in the Health Department of the City of New York severe diphtheria was contracted by the inadvertant sucking up of virulent bouillon cultures of diphtheria bacilli into the mouth. Hence, it would seem, despite the fact that in a third such instance no diphtheria resulted, that the diphtheria bacillus is the cause of the disease. There are undoubtedly diseases that strongly simulate diphtheria, but they do not possess all the characters of diphtheria and can be differentiated even clinically from that disease. Just as cases of pneumonia may be due to the pneumococcus or to the influenza bacillus, so membranous formations in the throat may be produced by various microbes. Diphtheria antitoxin neutralizes diphtheria toxin even outside the body. A mixture of the two may be injected into animals without danger, hence, the lesson to inject diphtheria antitoxin as soon as possible so as to prevent the diphtheria toxins from producing serious deleterious effects before they are neutralized. Besides, secondary infections are not affected by the diphtheria antitoxin. Hence, this remedy should be used early and before the occurrence of secondary infection for which the diphtheria is a predisposing cause. That the belief in diphtheria antitoxin is not a mere fad may be gathered from the fact that while its advocates have so much confidence in diphtheria antitoxin, they do not consider the other antitoxic sera to be of any very great value in human therapeutics.

Statistics of Diphtheria Antitoxin.—In New York for twenty years before 1895, the actual number of deaths from diphtheria each year remained about the same, that is, despite the increase of population there was no actual increase in the mortality from diphtheria. There was a certain periodicity in its fatality. About every sixth year the number of deaths reached three thousand. The mortality ran down to about two thousand in certain years, and averaged about 2400. The lowest mortality in any one year was 1600. In 1894 before the introduction of antitoxin the number of deaths was 2870. During these last four years the average number of deaths has been 1300, that is, more than 1000 less than the average of preantitoxic days. In Boston a similar decrease in the number of deaths has taken place, and the percentage mortality from diphtheria is now less than 4 per cent. Not all the decrease in the number of deaths is due to antitoxin. No one claims this. A certain amount of the decrease in the mortality is due to better hygienic surroundings in the large cities. It is a very striking fact, however, that such a notable decrease in the death-rate from diphtheria should have occurred immediately after the introduction of antitoxin and that this decreased mortality should have continued ever since. Last year in New York 2500 children were injected with antitoxin. Of these 300 died. Without antitoxin the mortality would have been at least double what it was. The death-rate even in laryngeal diphtheria was only 22 per cent., while formerly this type of the disease was fatal in over 60 per cent. of the cases here in New York. Six thousand five hundred children were immunized by injections of diphtheria antitoxin. Of these 28 cases developed the disease within twenty-four hours and all of them recovered; 27 children developed the disease after the lapse of twenty-four hours and all of these recovered with one exception in which scarlet fever complicated the diphtheria. All of these children were directly exposed to contagion, yet over 6400 failed to take the disease. As the result of the immunization some rashes developed and in a few cases some febrile reaction was noted, but nothing lasting supervened.

A good deal of dispute has arisen with regard to the effect of diphtheria antitoxin at the Willard Parker Hospital. Before the introduction of antitoxin the mortality from diphtheria was 30 per cent.; since then it has been 22 per cent. The mortality of cases of intubation for the six months before the introduction of antitoxin was 85 per cent. During these last two years the mortality among these cases has been 52 per cent. Last summer the crucial test was made of taking each alternate diphtheria patient that came to the hospital and treating one series with and the second series without antitoxin. It was very clear to the whole staff that the children that received antitoxin did better than those that were treated without antitoxin. In Boston the hospital mortality from diphtheria is 12 per cent.

Innoxious Serum.—The desideratum now is a serum that will do no harm while accomplishing the good it can do. The only safeguard is to have clean and sterile serum not over six months old. Not that serum deteriorates with age, but

that there is less of it after standing and one can not be sure of the number of units employed. The Health Department uses no antiseptic in its serum, so that the old contention that whatever effect is produced by the antitoxin is due to the carbolic acid used for preserving it now falls to the ground. Certain sera for reasons not well understood produce rashes. It is the present effort of the Health Department to get rid of the sera that produce these undesirable effects. The only way to eliminate them is by actual test of samples of serum.

Amount of Antitoxin.—In mild cases 1000 to 2000 antitoxin units are to be used. In severe cases 2000 to 3000 units. If necrosis is occurring 3000 to 4000. If twelve hours after the administration of the antitoxin there is no change in the symptoms noted, the dose should be repeated. Twelve hours later it may be repeated once more. As a rule, in children under one year not more than 3000 units should be given at a single dose. In children under six months not more than 2000 units should be given at one time. Advantage should be taken of the fact that a moderate dose of serum will give immunity for at least two weeks, to protect other children of a family who may be exposed to the contagion.

Yellow-Fever Antitoxin.—Dr. Fitzpatrick, as a substitute for Dr. Alvah H. Doty, Health Officer of the Port of New York, who was unavoidably absent, described some experiments made with the serum of the bacillus icteroides at Swinburne Island in New York Harbor and at Vera Cruz in Mexico. (The observations at Vera Cruz were published in the MEDICAL NEWS.) The results as a whole show that no influence is exerted on the disease by the serum. The serum is exactly the same as that used by Sanarelli who reported very satisfactory results from its use in South America, treating 22 cases of yellow fever with six deaths. Archinard in New Orleans also observed no special benefit from the use of serum prepared by Sanarelli himself. Dr. Wasdin of the United States Marine Hospital service used Sanarelli serum in three cases of yellow fever, but without satisfactory results. The injection of the toxin of the bacillus icteroides into patients convalescent from yellow fever gives the falling temperature with rising pulse which is pathognomonic of yellow fever. This specific reaction would seem to substantiate the claim that Sanarelli's bacillus icteroides is pathogenic for yellow fever.

Haffkine's combination of a serum obtained by the use of the bacillus icteroides and the bacillus coli communis has not yet been used on human beings, although it has given some encouraging results according to its inventor, at least, in the laboratory. Agramonte reports four cases of yellow fever treated with human serum taken from patients convalescent from yellow fever. The cases are too few to draw any conclusions from them, and besides no decided benefit was noted after its use.

Typhoid Serum.—Dr. William H. Welch of Baltimore sent his regrets for not being able to attend the meeting, and a note stating that in his opinion there is no satisfactory evidence of the clinical or laboratory value of any typhoid serum so far prepared. A vaccine recently invented seems to be more promising, but, as is evident, a long series of observations will be needed before its definite value can be decided. There is enough known of the subject to encourage further observation, but that seems all that can be said.

Antirabic Serum.—Dr. R. J. Wilson, of the Health Department of the City of New York, said that animals had been inoculated with rabies and then the serum collected with the idea that it would prove curative of the disease. The results so far obtained are extremely doubtful. The subject is one of the greatest interest, because once the symptoms of rabies have developed the Pasteur preventive treatment fails of its purpose. It is to be hoped, then, that the antirabic serum used in combination with the preventive treatment may retard the invasion of the disease, and so give preventive inoculations time to effect their prophylactic purpose.

Antistreptococcus Serum.—Dr. Howard Lilienthal said that he has no reason to change the opinion which he expressed with regard to antistreptococcus serum three years ago. He then said that it rarely did harm and that patients should be given the chance that its administration sometimes seems to afford. When patients to whom it is administered have only a local streptococcus infection, they all recover. Dr. Lilienthal, however, has never seen a single case of recovery when streptococci could be demonstrated in the blood. Certain inconveniences attach to the use of a serum. The troublesome urticaria is frequently noticed. Once streptococci were found at the point of inoculation in an abscess although the serum was proved surely sterile by failure of cultures from it. Streptococci were found in the blood of this patient, the abscess became large and phlegmonous, and the patient died on the eighth day. A good practical rule in cases of septicemia seems to be to open up the wound thoroughly and then if streptococci can be found in the blood or in the urinary sediment, give the serum. If there are no streptococci in the urine, await the result of the blood-cultures, unless the symptoms become alarming. Successful blood-cultures may be delayed from three to seven days.

Dr. William B. Coley gave the recent results of the mixed toxins in sarcoma. They appeared in a recent issue of the MEDICAL NEWS.

Technic of Injections.—Dr. Gibb said that not more than 500 to 1000 antitoxin units need be given at a single dose. The best place to give the injection is in the outer part of the thigh, inserting the needle to the depth of an inch and a half. The injection should be given very slowly, five to fifteen minutes should be taken for the purpose. The injection should be repeated in twenty-four hours and again in forty-eight hours, unless the symptoms show marked improvement.

Dr. Knopf said that he had had some experience with antituberculous and antistreptococcus serum, but his success with these remedies had not been such as to make him wish to use them to the exclusion of dietetic and hygienic methods. He had especially tried Marmorek's streptococcic serum for secondary infection of tuberculous lungs; and, while it seemed to give some reduction of temperature in cases where streptococci were found in the sputum, the definite results had not been very satisfactory. Experimentation along these lines must be continued, since it promises so much.

NEW YORK ACADEMY OF MEDICINE—SECTION ON MEDICINE.

Regular Monthly Meeting, Held Tuesday, March 20, 1900.

John H. Huddleston, M.D., Chairman.

The subject for the evening was a discussion on rheumatism.

Treatment in the New York Hospital.—Dr. Hughes Dayton said that the first and most essential part of the treatment for acute rheumatism in the New York Hospital is considered to be rest in bed, on a low diet consisting entirely of liquids. The drug-treatment is begun with a thorough purgation by salines. The salicylates are then administered. The usual form is the salicylate of soda in fifteen-grain doses every three hours, until the symptoms of fever and pain abate. If mental symptoms develop as the result of the fever, sodium bromide, thirty grains, is given with each dose of the salicylate. The tolerance for the salicylates is much better when administered in conjunction with the bromides. When for some reason the sodium salicylate is not borne well, salol is substituted, although this drug is usually given only in mild cases. Twice within the year, symptoms of poisoning with the salicylates have occurred. In neither case had they been administered in any considerable doses. These cases serve to show that it is not so much the absolute dose of the salicylates that cause the symptoms as it is a special susceptibility of the patient to their effects. In one case in which sodium salicylate seemed to be the cause of active delirium, the symptoms were very much lessened by large doses of sodium bromide. When sodium salicylate cannot be given salophen sometimes gives good results. When sodium salicylate is not borne by the mouth, it will sometimes be absorbed by the rectum without giving symptoms of irritation. Of late this method of administration has been successfully employed several times in the New York Hospital. Locally the application of methyl salicylate affords great relief from the pains. When the other salicylates cannot be taken by the mouth, the external application will sometimes of itself serve the purpose of ameliorating the pain. After the application of the methyl salicylate on a thin compress of gauze, it is covered with rubber-tissue and bound on. Absorption takes place very rapidly. Salicylic products can be noted in the urine thirty minutes after its application to the unbroken skin. If fluid persists in the joints after the acute symptoms have subsided, a cantharides blister will help to disperse it. For hyperpyrexia large doses of sodium salicylate are given besides a cold bath at 65° F. For the stiffness that follows acute rheumatism hot-air applications are usually employed. For subacute rheumatism the salicylates are not pushed to the extent to which they are used in acute cases. The alkali treatment is found to be very useful in these cases. Locally applications of methyl salicylate and hot-air baths give the most satisfactory relief of symptoms. For chronic rheumatism local hot-air treatment is employed and nutritious diet is provided, the alkali waters are given plentifully and the iodides freely prescribed. For muscular rheumatism salol and phenacetine are found to be of advantage, methyl salicylate is used locally; also belladonna ointment with good effect. It is in these cases particularly that counterirritation does good.

Treatment at the Mt. Sinai Hospital.—Dr. L. A. S. Bodine said that for acute articular rheumatism, first, calomel and salines are used to clear out thoroughly the intestines. Then fifteen to twenty grains of salicylate of soda is administered every four hours until the acute symptoms abate. Bicarbonate of soda is given in sufficient doses to make the urine alkaline and keep it so. Baths, at a temperature of from 75 to 90° F., help to relieve the acute symptoms. If eruptions occur and severe tinnitus aurium, the salicylates internally are replaced by external applications of oil of wintergreen, or by full doses of iodide of potash internally. For hyperidrosis, belladonna or its alkaloid is used. When the pain is very severe and persistent, phenacetine or antipyrine is employed. If the sleep is much disturbed, trional and the bromides are indicated. The patient is kept on an absolutely liquid diet, but is not limited to milk. On the contrary, a large variety of liquids are allowed, so as to avoid as far as possible the tendency to malnutrition so marked in rheumatism. Coffee is allowed once or twice a day, but it is apt to cause sleeplessness. All nitrogeneous food is avoided. The drinking of plenty of water is encouraged. The salicylates are always given well diluted and never on an empty stomach. The oil of gaultheria is employed for its local effect on the symptoms of the disease. When the effusion into the joints is extensive, tincture of iodine, firm pressure, immobilization and, as far as possible, elevation of the limb, are employed with very satisfactory results. For chronic rheumatism hot-air baths are employed and potassium iodide prescribed in reasonably large doses. Passive motion and massage help to restore mobility to the joints.

During convalescence from an attack of acute rheumatism one of the most important indications is the anemia that so commonly develops. For this, quinine, iron and strychnia are given. After forty-eight hours' remission of symptoms, eggs and starchy foods may be allowed, but no meats

until convalescence is well established. Chicken or turkey should be the first meats permitted. Out of 38 cases of rheumatism treated during the past year in Mt. Sinai Hospital, 29 were discharged cured and the remaining 9 were benefited.

Dr. J. J. Walsh then read a paper on

The Differential Diagnosis of Chronic Rheumatism.—It will appear in a subsequent issue of the MEDICAL NEWS.

Hot Air for Chronic Rheumatism.—Dr. Thos. L. Satterthwaite said the original use of hot air in medicine was suggested by Turkish baths and the first experiments were made with the simple warm chamber in which the patient was enclosed. As under these circumstances he would rebreathe the products of his own respiration, a box in which only the body or parts of the body were enclosed seemed more advisable. In a Turkish bath the temperature cannot be raised as a rule above 170° F. In the hot-air box parts of the body can be subjected to a temperature of 400° F. The main idea of all the mechanisms which have been invented for the purpose of giving hot-air treatment has been to keep the skin dry while the air is heated all around the limb or part of the body that was subjected to the high temperature. For this purpose, when the temperature to be borne is not very high, the part is simply covered with a Turkish towel; when the whole body is to be subjected, it is covered with an ordinary bath-robe. When temperatures above 300° F. are to be borne, however, the part must be very carefully wrapped up and no spaces allowed to exist between the cloth and the skin. Otherwise, the perspiration at these points will become so heated as to scald the patient.

Precautions.—Machines for giving hot-air treatment are very thoroughly lined with asbestos so as to prevent the patient from being burned. There is no disadvantage in submitting patients suffering from albuminuria or glycosuria to the hot-air treatment. On certain theoretic grounds it has been taught that these conditions constituted a contraindication. In practice they have not proved so. If the hot-air bath is continued too long it acts as a nerve-depressant. In this matter each patient must be a law unto himself. No general rule can be laid down. When the treatment is first given the patient should be specially watched, his temperature and pulse and his general condition faithfully noted, and before any sign of depression manifests itself the treatment should be stopped. Patients grow accustomed to the treatment after a time and then it may be continued for a longer period than at first.

Effects of Hot Air.—When a limb is subjected to hot-air treatment there is at first a lessening, then an increase, in the circulation of the skin of the part, with the injection of the peripheral capillaries and a sense of a warmth. The pulse gradually rises until it is ten to twenty-five beats higher than it was when the treatment was begun. There is a rise of temperature of from one to five degrees. There is usually an increase of respiration up to twenty-two or twenty-four to the minute. A general sense of comfort comes over the patient very soon and continues as long as the treatment is doing good. After a time, which is variable in different patients, a nervous depression supervenes which should not be allowed to continue. As a rule the treatment should stop just short of this and then it will have its maximum effect. Professor Stewart of McGill University says that for rheumatoid arthritis, meaning by this what in the States is known as chronic rheumatism, the hot-air baths are the best remedy there is. They have been tried now in a large number of cases and there is no doubt that they give excellent results in an ailment from which the doctor is able to afford very little relief. For chronic arthritic rheumatism, for muscular rheumatism, for sciatica, for rheumatic painful conditions that succeed old fractures the hot-air treatment is a most important indication.

Possible Contraindications.—It is not positively known whether or not in anemia, fatty degeneration and arteriosclerosis the use of the hot-air treatment is dangerous. The rise of pulse and temperature and a certain tendency to increase of blood-pressure that occurs would seem on theoretic grounds to mean that the hot-air treatment is contraindicated wherever a degenerate heart or arteries are concerned. Although the treatment has been used in a good many of these cases, no accidents have as yet been reported. Special care should be taken, however, with the hot-air treatment in these conditions. The treatments should not be prolonged and the effects of the first few treatments should be noted very carefully.

Dr. H. W. Gibney read a paper, entitled

Rheumatic Joints Treated by Hot Air.—This paper will appear in a subsequent issue of the MEDICAL NEWS.

Electricity in Chronic Rheumatism.—Dr. W. J. Morton said it is the custom to say that very little is known about electricity. Lord Kelvin once said that a good deal more is known about electricity than is known about shoemaker's wax, for instance, or a good many other things that are in common use. It is the custom to divide electricity into the three forms, Faradism, Galvanism and Franklinism. There is, however, no real distinction between these three forms. Electricity in any form consists of the development of electromotive force which, when applied, represents work done.

While, so far as the essential qualities of electricity are concerned, it makes no difference which form of electricity is used, it has been found in practice that the high potential and the high frequency of an influence machine are the most efficient remedial measures.

The form of electricity that Dr. Morton has found most effective for these cases is the static current. One pole of a static machine is connected with the earth, the other is connected with

the patient who is placed on an insulated glass stool. Under these circumstances the patient represents one tin foil of a Leyden jar. The air represents the glass and the room the other tin foil of the jar. The patient is thus subjected to powerful condenser waves, which are most effective in certain painful and trophic conditions. Among the advantages of this form of electrical treatment may be mentioned, first, the fact that there is no sensation of pain or even of discomfort; second, that it produces a benumbing effect upon any painful conditions which may be present; third, that there is no muscular unrest as a result of its application to disturb irritated structures; fourth, that it has been demonstrated that during its application the absorption of oxygen by respiration is distinctly increased and the elimination of carbon dioxide also proportionately increased. There is some loss of weight as the result of the heightened metabolism. This is readily regained, however, because of the tonic effect of the electrical treatment, and the general health improves very materially and rapidly, under frequent administration of this current. In addition to the general effect of the electricity, there is a local reaction which relieves pain and corrects disturbed local metabolic processes.

Nervous Theory of Rheumatism.—Various theories have been advanced for the etiology of the rheumatic condition. For a long time it was thought to be due to hyperacidity of the blood. This view has, however, lost rather than gained adherents of late years. A modern view is that the arthritic symptoms are due to some defects in the nervous system, in a word, that rheumatism is a neurotrophic condition of the joints. This explanation is as good as any other. It constitutes an indication for treatment by electricity that should not be neglected. There is no doubt that for chronic and subacute rheumatism, general electrization is becoming more and more popular and that electrostatic-current methods are especially giving brilliant results of late years.

Technic of Electrical Treatment.—The electrodes may be made of any pliable metal. Dr. Morton uses block tin himself and has it in sheets or rolls that may be cut to any desired size. The spinal electrode for instance may be one inch by twelve inches, and this may be used also to wrap around joints, such as the wrist, or to mold on a limb. The smaller electrode, it must be remembered, the more intense the local electric action. The bare metal should be applied to the bare skin without any intervening leather or other covering. Metallic cloth which can be obtained from military furnishing-stores may be used to wrap a whole limb, or even to envelope the entire person of the patient. A suit consisting of blouse and pajamas may be made from it. If an unpleasant prickling accompanies the application of the current it may be dispelled by pressure. A sitting should last for fifteen to thirty minutes, although this depends to a great extent on the patient. Just as for a ride on a bicycle or on horseback, the condition of the patient should be carefully consulted to determine the length of each treatment.

Results of Treatment.—Immediately following an application of the electrostatic current in painful conditions the most noticeable result is a relief of pain that lasts for some hours. After each cucceeding séance the duration of the relief thus afforded becomes longer and more and more powerful currents may be used with progressively good results. Locally long sparks may be employed with excellent effect in acute painful conditions. Dr. Morton has employed the electrostatic current for twenty years and has found no method so effective for painful conditions that are due to a constitutional diathesis. In gout, for instance, the relief afforded is often so complete and so rapid that the patient stamps after a séance to assure himself that the pain is really gone and that he is not laboring under a delusion. Rheumatoid arthritis may be completely arrested by applications of the electrostatic current. It does not, of course, restore tissue that has been destroyed, but the swelling disappears to a large extent, the disability is greatly lessened, and the patient made very comfortable compared to his former state. Dr. Morton showed by a series of X-ray photographs that even in old cases of rheumatoid arthritis there are often no serious changes in the bony structures. The pathologic conditions in the soft structures are very promptly ameliorated. The first sign that the treatment is doing good is seen in the disappearance of that shining look so characteristic of the disease. After this the joints begin to grow better. There is undoubtedly a fruitful field in hospital work for electrostatics. Every hospital should be supplied with a large influence machine.

Diagnosis vs. Treatment of Rheumatism.—In discussion Dr. Lezinsky said that there would undoubtedly be fewer complaints of failure in the treatment of rheumatism if the diagnosis were made more exactly. Neurologists are constantly finding cases that have been treated for rheumatism in which the painful condition is really due to some nervous defect. There is a tendency in our day to neglect local measures and depend almost entirely on internal medication. It must not be forgotten that the cold pack and local applications, such as wintergreen oil, may be of the greatest service for the relief of pain and may very materially aid the internal treatment. For chronic rheumatism the hot-air treatment is not used as much as it ought to be. The electrostatic treatment has not given much benefit in Dr. Lezinsky's hands. It does good in muscular rheumatism, but does not help chronic rheumatism much, and he is never willing to confine the treatment to static electricity alone. There is no doubt that static electricity would do much more good than it does now in the practitioner's hands, if it were used for a longer period at each sitting. Five to six minutes of an electrical séance can have scarcely more than the psychical influence which so many claim to be the only effect of electricity.

Dr. Manges said that it is undoubtedly a mistake to saturate a patient suffering from rheumatism with the salicylates to the exclusion of local and other forms of treatment. The salicylates are not a specific for rheumatism and they do not prevent heart complications more than any other form of treatment. Dr. Pribram of Prague in his recent work on acute rheumatism in Professor Nothnagel's system of special pathology and therapy collects a large series of cases of rheumatism treated with the salicylates, with 68 per cent. of heart complications, and another series of cases treated without the salicylates with only 50 per cent. of heart complications. At Mt. Sinai Hospital it is noted that patients convalescent from rheumatism suffer to a marked extent from anemia. This must be borne in mind and tonic treatment, especially iron tonics, must be begun as soon as acute symptoms subside. There are two dangers in the use of the hot-air treatment. The one is from fire, which has occurred twice in the wards of the Mt. Sinai Hospital, although the greatest care was taken. The other is the danger of setbacks from exacerbation of symptoms, because of exposure to cold immediately after the hot-air treatment, or because the air of the room is too cold during its administration.

Dr. Kessler said that he has now treated 350 cases of all kinds of arthritic troubles by the hot-air method and he is convinced of the great benefits to be derived from its use. Out of 20 inveterate cases of chronic rheumatism 18 were so much benefited that they were able to resume occupations given up long before. Five resumed work after five years of idleness, one had been helpless for fourteen years. It is not the only treatment used, but it is an excellent adjuvant to other methods. Lactic-acid lemonade seems to be of distinct service in these cases of chronic rheumatism. Joints should not be immobilized during an attack of acute rheumatism as they may become anchylosed. This warning is important as it is mainly the joints that have been immobilized too strictly that come to be treated afterward by hot air. For muscular rheumatism acupuncture is an excellent remedy, and often affords relief when all other means fail. The highest temperature in the hot-air baths should not be above 340° F. There are those who advise the use of 400° F., but the increase of temperature adds considerably to the risk of burns and to the depressing effect on the patient and does not add proportionately to the curative effect of the hot-air bath. At a temperature of 340° F. the apparatus requires the most careful watching to prevent scalds.

Treatment of Neuralgias.—As a rule, neuralgias are not benefited by the hot-air treatment. Besides, there is not infrequently considerable danger in neuralgic cases of the patient taking cold afterward. Sciatica, however, is often relieved by hot-air treatment when everything else has failed. Rheumatic gout is most resistant to treatment. Burns are out of the question, as a rule, in a good apparatus if a reasonable amount of care is taken. The thermometer at the top of a hot-air machine from which the reading is made is always at least 30 degrees higher than the air at the bottom of the machine where a current of fresh air is constantly entering. For neuralgia of the face and for the itching of the eyeballs sometimes noted in gouty subjects, the little machine known as a Japanese hand-warmer often affords a great measure of relief. It may simply be held in the hand and applied to the affected part. Rheumatic iritis, an extremely discomforting condition, is often relieved by the same simple apparatus.

Dr. Satterthwaite, in closing the discussion, said that the hot-air apparatus is not merely a conventional method of treatment, the use of which can be confined to any one who cares to purchase the apparatus. The fact that a notable increase in the temperature, in the pulse, and in the respiration-rate is noted shows that hot-air treatment is a serious therapeutic agent, the abuse of which may be followed by unfortunate results. Hot-air treatment, then, should be given only under the immediate supervision of a medical man and one who has had some experience with this method of treatment and with the apparatus he proposes to use. At present, unfortunately, the use of these apparatus is mainly in the hands of certain non-professionals who do not realize the necessity for care in their use and who probably have no proper notion of the dangers that may be involved in their employment.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held Tuesday, March 6, 1900.

The Vice-President, Joseph Collins, M.D., in the Chair.

Aneurism of Aortic Arch; Pupillary Abnormality.—Dr. W. B. Noyes presented a man, forty-six years of age, who had the initial lesion of syphilis four years ago. He had been referred to Dr. Noyes recently for a recurrent laryngeal paralysis, the result of pressure of an aneurism of the arch of the aorta. Further examination showed increased knee-jerk, mental symptoms, a pupillary abnormality, and a mental dulness which suggested an incipient general paresis. The left pupil was contracted, the knee-jerks were markedly increased; under any mental strain he showed twitching of the face. The case was exhibited to determine whether or not it might not be possible for such an aneurism to cause this pupillary phenomenon by interference with the sympathetic branches. The aneurism is not sufficiently large to involve the spinal cord.

Dr. G. M. Hammond said that he had made a superficial examination of this man. There could be no question about there being certain mental defects, and from a consideration of all the signs and symptoms it seemed to him that the man was suffering from cerebral syphilis. This was am-

ple to account for the change in voice and for the other symptoms.

Dr. Pearce Bailey was disposed to explain the alteration in the voice and the pupil by pressure on the recurrent laryngeal nerve and interference with the sympathetic.

Dr. B. Sachs said that the very great difference in the two radial pulses seems sufficient evidence of the presence of aneurism, and the aphonia is characteristic of peripheral disturbance resulting from solid neoplasm or an aneurism. The condition is entirely typical of what is commonly found in general paresis, cerebrospinal syphilis, and some other conditions. The mental symptoms do not seem to him characteristic of an ordinary general paresis.

Dr. W. M. Leszynsky said that both pupils react very well to convergence, showing that in all probability the pupillary reaction is not dependent upon any special syphilitic condition.

Dr. Noyes said that the examination of the eyes shows mixed astigmatism in both eyes, slight paleness of both optic disks, and weakness of the eye muscles, but no definite paralysis. Laryngoscopic examination shows plainly a recurrent laryngeal paralysis. It has existed about three weeks, and is improving under antisyphilitic treatment.

Specific Cervical Pachymeningitis.—Dr. Sachs presented a man, thirty-eight years of age, who gave a fair history of having had a hemiplegic attack about three years ago. From this he recovered promptly, and had no further trouble until last October, at which time he developed a complete rigidity of the cervicodorsal region of the spine. In addition, he complained of great pain radiating from the lower cervical region into the arm, and presented a very marked atrophy of muscles of the right shoulder girdle. A diagnosis was made of specific pachymeningitis of the cervical region. The case is interesting as presenting a clear example of extraspinal syphilis. The pains and atrophy are interpreted as root symptoms. There is a clear history of syphilitic infection having taken place five years ago. The patient was put upon increasing doses of the iodide, and had taken as much as 60 drops of the saturated solution three times a day. He is now entirely free from pain, and can move his head very freely. The speaker said that in his experience these cases have been extremely rare.

Dr. Joseph Fraenkel said that there is at present a similar case at the Montefiore Home. The patient is a man, about thirty-two years of age, who gave no history of syphilis. He had about four months ago a transient hemiplegia, with some mental deterioration. Six weeks later he developed pain and stiffness in the neck. He was admitted about two weeks ago, and at that time exhibited a marked torticollis. He is stupid and apathetic; the pupils are unequal and do not react to light. There are evidences of the old right-sided hemiplegia, and on the left lateral portion of his neck are two distinct and rather hard tumefactions. The trapezius, deltoid, biceps, triceps, and the interdigital muscles on the left side are all considerably atrophied, and give the reaction of degeneration. All the muscles on the left side of the neck are in a state of increased myotatic irritability. The diagnosis was made of a syphilitic meningitis of the base and of the upper part of the cord. Under antisyphilitic treatment improvement has been quite rapid.

Dr. Joseph Collins thought there could be no doubt that the case just presented is one of those rare examples of syphilitic pachymeningitis, rare in that it attacked the roots. He has seen the case referred to by the last speaker. There had been a true myositis in the cervical region, producing a torticollis, muscular atrophy, and degeneration. He sees no reason for the statement that this case is a parallel to the one presented by Dr. Sachs.

Disease of the Thoracic Division of the Sympathetic Chain.—Dr. Joseph Fraenkel read a paper with this title. He said that most of the text-books make meager reference to the sympathetic system, and, indeed, there was very little known about the thoracic sympathetic. The following case was reported: The patient, a woman, was first seen on July 25, 1898. Her family history was excellent, and she herself was of simple and temperate habits. She had been in good health up to ten days prior to this first examination. At that time she had awakened at midnight with a peculiar pain in the left extremity, and this had soon been followed by painful contractions of this extremity, and finally of the other lower and upper extremity. The attack had lasted a few minutes and had terminated in a laughing spell. No aura had been detected. The objective findings after an exhaustive examination justified only a diagnosis of hysteria. On April 17, 1899, he found her sick in bed, complaining chiefly of severe pain in the thoracic region. The rhythm of the pulse was greatly disturbed, but otherwise the physical examination was negative. Subsequently there had been a rise of temperature, and auscultation then revealed a distinct systolic murmur over the heart, which was attributed to the great distention of the abdomen with gas and the consequent displacement of the heart. The next morning she was very much better, but the following evening she went into collapse and died before a consultation with a surgeon could be held. At the autopsy, made by Dr. Van Gieson, the four upper sympathetic ganglia on both sides were found buried in a mass of purulent material. The pus lay beneath the pleura near the vertebral column. There were no evidences of recent reactive inflammation in the neighborhood of this abscess. The other findings were negative. Staphylococci and streptococci were found in the pus. There were no tubercle bacilli present. The speaker expressed the opinion that hysteria was the only possible clinical diagnosis in this case, and it should be remembered that fatal hysteria is not unheard of. He had been able to collect fourteen such cases. The case raised the interesting question as to whether the closing symptoms were connected with the earlier ones, or

were entirely independent of them and due to the accidental involvement of the thoracic sympathetic ganglia.

Dr. Hammond said that the report did not seem to him to connect the lesions found at autopsy with the symptoms detailed in the clinical history. The inference was that the patient at first had hysteria and subsequently developed the abscess which caused her death.

Dr. Sachs said he was pleased to learn that there are very few recorded cases of fatal hysteria that could stand a critical examination. He had at one time under his care a woman of twenty-five who presented all possible hysterical phenomena. The diagnosis of hysteria had been made by himself and by others, and was persisted in until the woman had suddenly developed coma. This was followed rather suddenly by anuria and death, and the autopsy revealed chronic nephritis. Of course, the latter had nothing to do with the hysteria. In the case under discussion some of the later symptoms that had been attributed to the hysteria were really the result of the abscess of the pleura. It would seem to him that this abscess must also have involved some of the roots as they emerge from the vertebral column; hence, the symptoms presented could hardly be interpreted as having been entirely the result of an invasion of the sympathetic chain. The case certainly did not present any marked relation between hysteria and the thoracic sympathetic.

Dr. Leszynsky said that hysteria is a functional nervous disorder which occasionally results in organic disease and so indirectly might be the cause of death. It is well for the general practitioner to remember that every symptom observed in an hysterical subject is not necessarily a part of the hysteria.

Dr. Collins took the ground that the first scene presented in this report was one of traumatic hysteria and that the latter symptoms were dependent upon the formation of a subpleural abscess. The woman unquestionably had not had hysteria until after her marriage, yet hysteria, like epilepsy, is a psychosis of early life. The abscess had apparently been of very slow formation, quite circumscribed near the very last, and a very small focus of degeneration could easily have caused her symptoms. The case seemed to show the possibility of the occurrence of hysteria as a part of derangement of the sympathetic.

Dr. Fraenkel said that he had endeavored to report in detail and without prejudice this case, which was clinically hysteria beyond all question. It is generally acknowledged that hysteria may occasionally cause death, usually through some paralysis of the sympathetic. The slight lesion of the sympathetic found at this autopsy would have been undoubtedly overlooked had the pathologist not been put on his guard by the request that a special search be made into the condition of the sympathetic.

Torticollis and Its Treatment.—Dr. W. P. Wilkin reported a case of torticollis occurring in a journalist, thirty-three years old, who had previously enjoyed good health, is of a nervous temperament, and lives liberally. During the summer of 1898 his work was exceptionally arduous, and he then became neurasthenic. After a time he began to suffer from an aching feeling in the back of the neck and along the right sternomastoid muscle. This gradually developed into a marked torticollis. The man entered St. Luke's Hospital in May, 1899, and was made to rest in bed for all but two hours out of the twenty-four, and a support was applied. Various methods of external and internal treatment were tried without benefit. He was then treated by the speaker at the Post-Graduate Hospital by suspension and by the internal use of eighteen-grain doses of the valerianate of zinc. A point of importance in the treatment seemed to be allowing him considerable freedom in the hospital and a liberal diet, and placing him in a private room instead of in a hospital ward. Subsequently the man experienced a great deal of relief while in a London hospital from the use of one grain of exalgin, three times daily. In these spasmodic cases gentle pressure with one or two fingers is often enough to restore the head after it has been drawn violently to one side. One of the best methods of treatment for this variety seemed to be an abundance of rest and a quiet out-door life. The employment of drugs alone can hardly be expected to accomplish much good.

Dr. Collins remarked that he has seen a number of cases of torticollis, but never one so severe and so disabling as this one. It was marvellous to see the prompt improvement that followed the use of suspension.

Dr. Hammond said that a number of years ago he had formulated the hypothesis that clonic torticollis is a result of irritation of the nuclei of the nerves, and that tonic torticollis was the result of irritation of the nerves themselves. Later experience has not led him to change this view, although he is aware that others do not accept this theory. From the history of the case just reported it seemed that this case had at least a partial psychical origin. The beneficial influence of suspension would lead him to suspect a psychical origin, for there is no reason for expecting benefit to follow suspension in a case of organic torticollis. In his own practice he has secured the best results from conium when pushed to its physiological limits. It has often proved serviceable in the organic cases when other remedies failed. In the psychical cases the selection of the remedy is not of much importance unless the psychical impression can be relieved. In the case under discussion he could not help feeling that the means used were entirely inadequate to have accomplished the results unless the case was largely psychical.

Dr. Leszynsky said that he had been intending to report two cases which had come under his care during the past six years, both of which had recovered. One of these patients, a woman, had been kept in bed from two to six months at a time. In addition to the general management so well

understood these patients had received massage and gymnastic manipulations of the head and neck. The first patient had this systematic treatment for a period of nine months. In his case suspension seemed to act both psychically and mechanically. The attendant was instructed to use massage up to the point of thoroughly stretching and exhausting the muscle. In both of these cases he used atropin, conium, and other remedies without much satisfaction. Suspension causes stretching of the muscle, and in this way gives it the needed rest.

Dr. R. G. Wiener said that he has four cases of torticollis which he had been able to observe for a long time. Two of these patients are males with an alcoholic history. By the hypodermic injection directly into the muscle of atropin and morphin, in increasing doses, these patients had been thoroughly restored in nine and eleven weeks respectively. The third case had been treated surgically, but had relapsed. The fourth case had proved rebellious to all treatment.

Curious Hysterical Disturbances of Vision.—Dr. Phillip Meirowitz reported this case, which occurred in a woman of twenty-five, of neurotic temperament and inheritance. In the spring of 1895 she began to suffer from hysterical attacks. Subsequently she developed laughing and crying spells, and these become more frequent and severe. When seen in March, 1898, the seizures had not been so severe and consisted chiefly of crying, brought on by mental strain. Frequently, when gazing into the air, or when looking at the pavement, colored concentric rings would be seen. In darkened corners she would see certain peculiar figures of various colors and shapes. On rising from a couch she frequently saw a succession of blue commas surrounded by green spots. These would disappear on looking out of the window, but people passing in the street would be surrounded by colored borders. Often the images were duplicated, and showed the complementary color. At times her memory became distressingly bad, and the spelling of words became difficult. Her condition had been ameliorated by hypnotism. When first seen in June, 1896, hysterical stigmata had been sought for, but not discovered. Examination of the eyes showed hysterical astigmatism.

Dr. Leszynsky said it is not unusual for the more intelligent hysterical patients to describe a great variety and multiplicity of symptoms. It is difficult to determine how much is purely subjective.

REVIEWS.

The Nervous System and Its Constituent Neurones. Designed for the Use of Practitioners of Medicine and of Students of Medicine and Psychology. By Lewellys F. Barker, M.B., Tor. New York: D. Appleton & Company., 1899.

It may well be said that this work contains everything known up to date of the anatomy of the nervous system based on the neurone conception. It shows a mass of research, an extensive amount of reading, and a fair amount of original work which has developed for the author a high position among the more progressive neuro-anatomists of the day.

After a general introduction showing the evolution of the neurone concept from the early work of Schleiden and Schwann, of Purkinge, and later of Heule and especially of Remak, von Kölliker and Deiters, to the later and more modern discoveries of His, Forel and Golgi, and to the still more recent researches of Ramón y Cajal, von Gehuchten, Retzius and von Lenhossék, the author takes up the most recent work of Apathy which was supposed to have destroyed, if not revolutionized, the entire fabric based on the neurone theory of the organization of the nervous system. He shows that, while recognizing the vast fund of information, of improved technic and of wonderful descriptions given by Apathy to the solution of the complex organization of the nervous system, Apathy's conclusions and deductions must be viewed askance until his work has been compared with the findings of other workers in this field.

The author next takes up the subject of the morphology of the neurones, with its internal and external characteristics and shows the epoch-making work in this field of Nissl, who has laboriously and industriously worked for many years therein. The work of Held on this subject is likewise well described.

The embryology of the nervous system is described under the caption of the histogenetic relations of the neurones. To this subject the author gives much attention and his descriptions and presentation of known facts are thoroughly adequate. Next, the physiology and pathology of the neurone engage his attention, and are followed by the grouping and chaining together of neurones in the complex nervous system of men and the mammals. The last is the main feature of the book and presents all the salient, as well as mooted, points in the anatomy of the nervous system.

Dr. Barker may well be proud of his work, which is without doubt the best presentation of the facts of neuro-anatomy that has appeared in the English language. The publishers have dressed the book in the best style, the illustrations being numerous and many of them finely executed.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to Philadelphia and the Presbyterian Hospitals, etc. Third Edition, Revised and Enlarged. 8vo., 1082 pages. Illustrated. Philadelphia and New York: Lea Brothers & Co. $6.00.

European students have been fortunate in having a number of practical treatises bearing on

medical and surgical diagnosis, but up to 1894 American students had to rely in large part on translations. Those of v. Jacksch and of Vierordt are classics, but each represented different trends in medical diagnosis; the former work leaned distinctly to the laboratory side, while the latter was almost exclusively clinical. The first edition of Musser in 1894 combined within one cover these excellent features and at once gained a popularity which it deservedly enjoys at the present time. This, the third, edition has been almost entirely rewritten and in its present form leaves little for the student or practitioner to desire. In fact there is a danger that the work will become too voluminous and thus defeat its own ends as a ready guide in the methods of diagnosis of diseased conditions. The work is divided naturally into two parts, general diagnosis and special diagnosis. General observations, the data obtained by inquiry and the data obtained by observation are the general subdivisions of twenty-one chapters included in the general portion. In addition to this summary of how to look for symptoms and what is their significance, there are special chapters on the blood and the morbid processes. Part II., dealing with special diagnosis, takes up in turn the methods of examination and the diagnostic features of disease of the following regions: Nose and larynx; diseases of the lungs and pleuræ; diseases of the heart, the blood-vessels and the mediastinum; diseases of the mouth, fauces, pharynx and esophagus; diseases of the stomach, intestines and peritoneum; diseases of the liver, spleen and pancreas; diseases of the kidneys and diseases of the nervous system.

Especial attention should be drawn to the chapter on diseases of the lungs and pleuræ and their excellent illustrations. We know of no work of this type that presents so extended and careful a summary of the important features connected with diseases in this region. The student who knows his Musser cannot fail to do his work well.

Principles of Surgery. By CHARLES B. NANCREDE, A.M., M.D., LL.D., Professor of Surgery and of Clinical Surgery; Emeritus Professor of General and Orthopedic Surgery, Philadelphia Polyclinic, etc. With an appendix by WILLIAM A. SPITZLEY, A.B., M.D., Senior Assistant in Surgery, University of Michigan. Illustrated. Philadelphia: W. B. Saunders, 1899.

THIS book is a reproduction of the thirty-six lectures which are delivered by the author each year at the University of Michigan and cover fairly completely the general principles of surgery without entering into a discussion of regional surgery or operations. Furthermore, the author, recognizing the drift of medical sciences and believing that the time has come when bacteriology and pathology should have their own departments for instruction, has omitted as far as possible a detailed description of the bacterial causes and the pathologic lesions of the various surgical conditions. Considerable space is devoted to a valuable and clear exposition of Nature's so-called "physiologic reaction to injury," or the "process of repair," and especially to the causes, appearances, symptoms and treatment of inflammation. A thorough understanding of the various inflammatory processes is, of course, the basis and foundation of all successful surgery and this question is so well treated that any student or practitioner would obtain many valuable suggestions from a perusal of this volume. Besides these fundamental, practical points, a short but interestingly written appendix sums up the history of the "views concerning inflammation" from the time of Celsus down to the recent days when so much discussion has been advanced, endeavoring to give a clear and logical definition of just what inflammation really is. The chapters on hemorrhage give many valuable suggestions and the description of the surgical diseases, especially hydrophobia, is both thorough and entertaining. As the name of the book implies, the principles of surgery alone are treated of, and the book is, therefore, better adapted for the student or practitioner, who desires knowledge in regard to the causes and the rationale of the treatment of the various surgical conditions, than for the intensely practical man who is always looking for new suggestions with reference to the treatment of special surgical cases. The reputation of the author is sufficient guarantee that this new volume will have a large and well-deserved circulation.

A Manual of the Practice of Medicine. Prepared Especially For Students. By A. A. STEVENS, A.M., M.D., Professor of Pathology in the Woman's Medical College of Pennsylvania, etc., etc. Fifth Edition. W. B. Saunders, Philadelphia, 1899.

As the author quotes from Pope in his original preface, "Half our knowledge we must snatch, not take," so does he attempt to put into proper form the knowledge derived from his own wide experience, and place it before the student in order that it may be "snatched," not taken. The little volume is a compendium of all that a student can well be expected to master during his comparatively brief stay at the medical college. The subject matter is placed before the reader succinctly and clearly. The classifications are good, the general arrangement of the various parts of each topic is conducive to clearness, and the fact that the book has now gone through five editions is pretty good evidence that it has met a demand which is as extensive as the contents are intensive. When supplemented and enlarged upon by diligent attendance upon lectures and critical observation at the bedside, the knowledge possible to be gained by the student from this handy little volume can hardly be overestimated. Free use has been made of the works of standard reputation, such as Strümpell, Osler, Vierordt, Gowers, Pepper, Starr, Jacobi, Bruce and Charcot, and the reader may be satisfied that his time

is advantageously spent in the perusal of this well-prepared text-book.

The International Text-Book of Surgery. By American and British Authors. Edited by J. COLLINS WARREN, M.D., LL.D., Professor of Surgery in the Harvard Medical School, Surgeon to the Massachusetts General Hospital; and A. PEARCE GOULD, M.S., F.R.C.S., Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School. Volume I. General and Operative Surgery Illustrated. Philadelphia: W. B. Saunders, 1900.

WITHOUT purporting to have created anything novel in this text-book, the aim of the authors has been to offer a description replete with the advances of surgery. To this end some of the foremost surgeons of America and England appear as collaborators. The respective chapters are thus worked out by specialists in their particular field. The result is an imposing array of *ex cathedra* opinions from dogma, as shown in the liberal reference to classical literature and the frequent lengthy quotations therefrom. The principles of surgery embraced in this first volume are before us for detailed consideration. Beginning with bacteriology, we find an unusually extensive rendering of the technics which is decidedly foreign to a manual of surgery. The colored plates of the bacteria are not as good as they might be, and hardly afford an aid to the novice for the identification of the original article.

A lucid and exhaustive exposition of the accepted teachings of inflammation follows in the succeeding chapters, but the like cannot be said of the accompanying crude illustrations which are meaningless without the necessary illustrative notes. The otherwise excellent chapters on septicemia and pyemia would be free from all confusion were it not for the introduction, at the outset, of the article on sapremia, an unknown quantity, which should have been supplementary rather than introductory. In contrast to these slight deficiencies the chapters on the technic of aseptic surgery, fractures and dislocations are of the best and would form a nucleus for a most excellent text-book in each instance. A most impartial chapter is that on anesthesia, and especially the elaborate and extensive consideration given to nitrous oxide is to be commended, although from the pen of a teacher and expert, the chapter on tumors is not creditable in so far as the unusual has usurped the commonplace. Histologic illustrations are deficient, and, quite naturally, photographs of rare clinical cases, lending themselves best for illustrative purposes, abound. The succinct account rendered in the chapter on diseases of the bones is due to the very rational teaching that osteomyelitis is the primary effect. Even this hasty review of this work is convincing of the scholarly application bestowed upon it by its authors, who, as writers, teachers and active surgeons, must necessarily draw attention to this, the latest creation of a text-book on surgery.

THERAPEUTIC HINTS.

For Otalgia.—Examine for the cause, treating nasal, pharyngeal or laryngeal ulcerations where these exist, or having carious teeth drawn or filled. In the acute form prescribe quinine sulphate, gr. ⅓ or ½, three times a day, or antipyrin, grs. xvi at one dose, followed by grs. viii one hour later. Or the following:

℞ Quininæ sulphat. ..... gr. xviii
Potassii iod. ..... gr. xxxvi
Sacch. alb. ..... gr. xlv.

M. Div. in chart. No. vi. M. Sig. One powder twice a day.

For the chronic form order quinine, iodide of potassium, iron, if anemia exists, or Meglin's pills, as follows:

℞ Zinci oxidi ..... ʒiiss
Rad. valerian. ..... ʒiiss
Ext. hyoscyami alc. ..... ʒiiss.
Pulv. et ext. glycyrrh. ..... q. s.

M. Ft. pil. No. C. Sig. One pill daily at first, increasing by one a day up to thirty, then diminishing correspondingly.

External treatment includes morphine ointment, vesicatories, and galvanism, the positive pole to the ear, the negative to the neck. Massage is occasionally beneficial.—*Politzer* (*Landesmann*).

Inoperable Cervical Cancer.—*Ranoletti* of Rome reports excellent results from applications of formaldehyde in ulcerated conditions of the cervix due to carcinomatous infiltration. The strength of the solution to be used depends on the amount of diseased tissue present and the reaction manifested in individual cases. A 20 per cent. solution is a very strong siccative agent. The infiltrated tissue becomes shriveled up, hemorrhage ceases, and the fetid discharge is suspended, giving the patient great relief. Ranoletti has also tried similar applications in cases of moist gangrene, thereby producing eschars, preventing the absorption of putrid matter which would otherwise occur, and protecting the patient from septic infection. Care must be taken not to allow the solution to touch the healthy tissue.

Pain after Tooth Extraction.—

℞ Spiritus ..... ʒ ss
Chloroformi ..... ʒ i
Arthritis ..... ʒ iii
Camphoræ ..... ʒ ii
Tinct. opii ..... ʒ ss
Ol. caryophylli ..... ♏ xv.

M. Sig. Apply on bit of cotton.—*T. B. Welch* (Gorgas, Dental Med.).

Styptic for Bleeding Gums.—

℞ Tinct. krameriæ ..... ʒi
Chloroformi ..... ♏ viii
Ac. tannici ..... gr. iv
Menthol ..... gr. iv
Aq. dest. ..... ʒii.

M. Sig. External use.—*Viau.*